

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
28 February 2002 (28.02.2002)PCT
(10) International Publication Number
WO 02/016655 A2(51) International Patent Classification⁷: C12Q 1/68(74) Agent: HAILE, Lisa, A.; Gray Cary Ware & Friederich
LLP, Suite 1100, 4365 Executive Drive, San Diego, CA
92121-2133 (US).

(21) International Application Number: PCT/US01/26685

(22) International Filing Date: 24 August 2001 (24.08.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/227,866 24 August 2000 (24.08.2000) US
60/264,647 26 January 2001 (26.01.2001) US
60/300,111 22 June 2001 (22.06.2001) US(63) Related by continuation (CON) or continuation-in-part
(CIP) to earlier applications:US 60/227,866 (CIP)
Filed on 24 August 2000 (24.08.2000)
US 60/264,647 (CIP)
Filed on 26 January 2001 (26.01.2001)
US 60/300,111 (CIP)
Filed on 22 June 2001 (22.06.2001)(71) Applicants (for all designated States except US):
THE SCRIPPS RESEARCH INSTITUTE [US/US];
10550 North Torrey Pines Road, La Jolla, CA 92037
(US); SYNGENTA PARTICIPATIONS AG [CH/CH];
Schwarzwaldallee 215, CH-4058 Basel (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HARPER, Jeffrey,
F. [US/US]; 2825 Camino del Mar, Apt. 64, Del Mar, CA
92014 (US); KREPS, Joel [US/US]; 2582 Luciema
Street, Carlsbad, CA 92009 (US); WANG, Xun [CN/US];
12524 Caminito Vista Soledad, San Diego, CA 92130
(US); ZHU, Tong [CN/US]; 5260 Caminito Exquisito,
San Diego, CA 92130 (US).(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
ZA, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).

Published:

- without international search report and to be republished upon receipt of that report
- with sequence listing part of description published separately in electronic form and available upon request from the International Bureau

(48) Date of publication of this corrected version:

9 January 2003

(15) Information about Correction:

see PCT Gazette No. 02/2003 of 9 January 2003, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING SAME, AND METHODS OF USE

(57) Abstract: The present invention relates to clusters of plant genes that are regulated in response to one or more stress conditions. The present invention also relates to isolated plant stress-regulated genes, including portions thereof comprising a coding sequence or a regulatory element, and to consensus sequences comprising a plant stress-regulated regulatory element. In addition, the invention relates to a recombinant polynucleotide, which includes a plant stress-regulated gene, or functional portion thereof, operatively linked to a heterologous nucleotide sequence. The invention further relates to a transgenic plant, which contains a plant stress-regulated gene or functional portion thereof that was introduced into a progenitor cell of the plant. In addition, the invention relates to methods of using a plant stress-regulated gene to confer upon a plant a selective advantage to a stress condition. The invention also relates to a method of identifying an agent that modulates the activity of a plant stress-regulated regulatory element.

WO 02/016655 A2

**STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS
CONTAINING SAME, AND METHODS OF USE**

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates generally to plant genes, the expression of which are regulated in response to stress, and more specifically to the gene regulatory elements involved in a stress-induced response in plants, to uses of the coding sequences and regulatory elements of such plant stress-regulated genes, and to transgenic plants
5 genetically modified to express such a coding sequence or to express a heterologous polynucleotide from such a regulatory element.

BACKGROUND INFORMATION

Microarray technology is a powerful tool that can be used to identify the
10 presence and level of expression of a large number of polynucleotides in a single assay. A microarray is formed by linking a large number of discrete polynucleotide sequences, for example, a population of polynucleotides representative of a genome of an organism, to a solid support such as a microchip, glass slide, or the like, in a defined pattern. By contacting the microarray with a nucleic acid sample obtained
15 from a cell of interest, and detecting those polynucleotides expressed in the cell can hybridize specifically to complementary sequences on the chip, the pattern formed by the hybridizing polynucleotides allows the identification of clusters of genes that are expressed in the cell. Furthermore, where each polynucleotide linked to the solid support is known, the identity of the hybridizing sequences from the nucleic acid
20 sample can be identified.

A strength of microarray technology is that it allows the identification of differential gene expression simply by comparing patterns of hybridization. For example, by comparing the hybridization pattern of nucleic acid molecules obtained from cells of an individual suffering from a disease with the nucleic acids obtained
25 from the corresponding cells of a healthy individual, genes that are differentially expressed can be identified. The identification of such differentially expressed genes

provides a means to identify new genes, and can provide insight as to the etiology of a disease.

Microarray technology has been widely used to identify patterns of gene expression associated with particular stages of development or of disease conditions in animal model systems, and is being applied to the identification of specific patterns of gene expression in humans. The recent availability of information for the genomes of plants provides a means to adapt microarray technology to the study of plant gene expression.

Plants and plant products provide the primary sustenance, either directly or indirectly, for all animal life, including humans. For the majority of the world's human population and for many animals, plants and plant products provide the sole source of nutrition. As the world population increases, the best hope to prevent widespread famine is to increase the quantity and improve the quality of food crops, and to make the crops available to the regions of the world most in need of food.

Throughout history, a continual effort has been made to increase the yield and nutritious value of food crops. For centuries, plants having desirable characteristics such as greater resistance to drought conditions or increased size of fruit were crossbred and progeny plants exhibiting the desired characteristics were selected and used to produce seed or cuttings for propagation. Using such classical genetic methods, plants having, for example, greater disease resistance, increased yield, and better flavor have been obtained. The identification of plant genes involved in conferring a selective advantage on the plant to an environmental challenge would facilitate the generation and yield of plants, thereby increasing the available food supply to an increasing world population. The involvement of these genes in a single organism to responses to multiple stress conditions, however, remains unknown. Thus, a need exists to identify plant genes and polynucleotides that are involved in modulating the response of a plant to changing environmental conditions. The present invention satisfies this need and provides additional advantages.

SUMMARY OF THE INVENTION

The present invention relates to clusters of genes that are regulated in response to a stress condition in plants. Such clusters include, for example, plant polynucleotides

whose expression is altered in response to two or more different stress conditions; and plant polynucleotides the expression of which are altered in response to one stress condition, but not to others. The identification of such clusters, using microarray technology, has allowed the identification of plant stress-regulated genes in

5 *Arabidopsis thaliana* (see Tables 1 and 2); and homologs and orthologs thereof in other plant species (see Table 32). Thus, the invention provides isolated polynucleotide portions of *Arabidopsis* plant stress-regulated genes, and homologs and orthologs thereof; variants of such sequences, and polynucleotides encoding substantially similar plant stress-regulated polypeptides expressed therefrom. Such sequences include, for

10 example, sequences encoding transcription factors; enzymes, including kinases; and structural proteins, including channel proteins (see Tables 29-31). Accordingly, the present invention also relates to an isolated polynucleotide comprising all or a portion of a plant stress-regulated gene, and to polynucleotide portions thereof, including a coding region (open reading frame), which encodes all or a portion of a stress-

15 regulated polypeptide, for example, as set forth in SEQ ID NOS:1-2703; and a regulatory element involved in regulating the response of the plant to a stress condition such exposure to an abnormal level of salt, osmotic pressure, temperature or any combination thereof, for example, as set forth in SEQ ID NOS:2704-5379.

The present invention also relates to a recombinant polynucleotide, which

20 contains a nucleotide sequence of a plant stress-regulated gene or functional portion thereof operatively linked to a heterologous nucleotide sequence. In one embodiment, the recombinant polynucleotide comprises a plant stress-regulated gene regulatory element operatively linked to a heterologous nucleotide sequence, which is not regulated by the regulatory element in a naturally occurring plant. The heterologous

25 nucleotide sequence, when expressed from the regulatory element, can confer a desirable phenotype to a plant cell containing the recombinant polynucleotide. In another embodiment, the recombinant polynucleotide comprises a coding region, or portion thereof, of a plant stress-regulated gene operatively linked to a heterologous promoter. The heterologous promoter provides a means to express an encoded stress-

30 regulated polypeptide constitutively, or in a tissue-specific or phase-specific manner.

Accordingly, in one aspect, the present invention provides an isolated polynucleotide comprising a nucleotide sequence of a plant gene that hybridizes under

- stringent conditions, preferably high stringency conditions, to any one of SEQ ID NOS:1-5379 (see Tables 1 and 2), including to a coding region (SEQ ID NOS:1-2703) or a regulatory region, which can alter transcription of an operatively linked nucleic acid sequence in response to an abiotic stress (SEQ ID
- 5 NOS:2704-5379; see Table 2), or to a complement thereof. Additional aspects provide sequences that hybridize under stringent conditions, preferably high stringency conditions, to the complements of SEQ ID NO 1-1261 (cold responsive genes; Tables 3-6), SEQ ID NOS:2227-2427 (saline responsive genes; Tables 7-10), SEQ ID NOS:2428-2585 (osmotic responsive genes; Tables 11-14), SEQ ID
- 10 NOS:1699-1969 (cold and osmotic responsive genes; Tables 15-17), SEQ ID NOS:1970-2226 (cold and saline responsive genes; Tables 18-20), SEQ ID NOS:2586-2703 (osmotic and saline responsive genes; Tables 21-23), and SEQ ID NOS:1262-1698(cold, osmotic and saline responsive genes; Tables 24-26), and which can comprise regulatory regions that can alter transcription in response to cold stress,
- 15 osmotic stress, saline stress, or combinations thereof (SEQ ID NOS:2704-5379; see Table 2). Also provided are nucleotide sequences complementary thereto, and expression cassettes, plants and seeds comprising any of the above isolated sequences.

- In another aspect, the present invention provides an isolated polynucleotide comprising a plant nucleotide sequence that hybridizes under stringent conditions,
- 20 preferably high stringency conditions, to the complement of any one of SEQ ID NOS:1-2703 (Table 1), including to a coding region thereof (SEQ ID NOS:2704-5379), wherein expression of said coding region is altered in response to an abiotic stress. Additional aspects provide sequences that hybridize under high stringency conditions to the complements of SEQ ID NO 1-1261 (cold responsive
- 25 genes; Tables 3-6), SEQ ID NOS:2227-2427 (saline responsive genes; Tables 7-10), SEQ ID NOS:2428-2585 (osmotic responsive genes; Tables 11-14), SEQ ID NOS:1699-1969 (cold and osmotic responsive genes; Tables 15-17), SEQ ID NOS:1970-2226 (cold and saline responsive genes; Tables 18-20), SEQ ID NOS:2586-2703 (osmotic and saline responsive genes; Tables 21-23), and SEQ ID
- 30 NOS:1262-1698(cold, osmotic and saline responsive genes; Tables 24-26), and which can comprise a coding region whose transcription is altered in response to cold stress, osmotic stress, saline stress, or a combination thereof. Also provided are nucleotide

sequences complementary thereto, and expression cassettes, plants and seeds comprising any of the above sequences.

The invention further relates to a method of producing a transgenic plant, which comprises at least one plant cell that exhibits altered responsiveness to a stress condition.

- 5 In one embodiment, the method can be performed by introducing a polynucleotide portion of plant stress-regulated gene into a plant cell genome, whereby the polynucleotide portion of the plant stress-regulated gene modulates a response of the plant cell to a stress condition.

- 10 The polynucleotide portion of the plant stress-regulated gene can encode a stress-regulated polypeptide or functional peptide portion thereof (see SEQ ID NOS:1-2703), wherein expression of the stress-regulated polypeptide or functional peptide portion thereof either increases the stress tolerance of the transgenic plant, or decreases the stress tolerance of the transgenic plant. The polynucleotide portion of the plant stress-regulated gene encoding the stress-regulated polypeptide or functional
- 15 peptide portion thereof can be operatively linked to a heterologous promoter. The polynucleotide portion of the plant stress-regulated gene also can comprise a stress-regulated gene regulatory element (see SEQ ID NOS:2704-5379). The stress-regulated gene regulatory element can integrate into the plant cell genome in a site-specific manner, whereupon it can be operatively linked to a heterologous nucleotide
- 20 sequence, which can be expressed in response to a stress condition specific for the regulatory element; or can be a mutant regulatory element, which is not responsive to the stress condition, whereby upon integrating into the plant cell genome, the mutant regulatory element disrupts an endogenous stress-regulated regulatory element of a plant stress-regulated gene, thereby altering the responsiveness of the plant stress-
- 25 regulated gene to the stress condition.

- In one aspect, the invention provides a method for producing a transgenic plant by introducing into at least one plant cell a recombinant nucleic acid construct comprising i) all or a portion of any one of SEQ ID NOS:1-5379; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to all
- 30 or a portion of the complement of any one of SEQ ID NOS:1-2703; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to abiotic stress, and that hybridizes under conditions of

- high stringency to the complement of any one of SEQ ID NOS:2704-5379; iv) a polynucleotide having at least 90% sequence identity with any one of SEQ ID NO:1-5379; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv),
- 5 wherein the fragment comprises a nucleotide sequence that alters transcription of an operatively linked coding region in response to abiotic stress; and regenerating a plant from the at least one plant cell.

- Another aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct
- 10 comprising i) any one of SEQ ID NOS:1-1261 or 2704-3955; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:1-1261; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to cold stress that hybridizes under conditions of high stringency to the complement of
- 15 any one of SEQ ID NOS:2704-3955; iv) a polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:1-1261 or 2704-3955; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv) wherein the fragment comprises a sequence or region that alters transcription of an operatively linked
- 20 coding region in response to cold stress; and regenerating a plant from the at least one plant cell.

- In another aspect, the invention provides a method for producing a transgenic plant by introducing into at least one plant cell a recombinant nucleic acid construct comprising i) any one of SEQ ID NOS:2428-2585 or 5108-5263; ii) a
- 25 polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:2428-2585; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to osmotic stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:5108-5263; iv) a
- 30 polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:2428-2585 or 5108-5263; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the

sequences of iv), wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to osmotic stress; and regenerating a plant from the at least one plant cell.

- Still another aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct comprising i) any one of SEQ ID NOS:2227-2427 or 4910-5107; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:2227-2427; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to saline stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:2227-2427; iv) a polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:4910-5107; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv) wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to saline stress; and regenerating a plant from the at least one plant cell.

- Yet another aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct comprising i) any one of SEQ ID NOS:1699-1969 or 4389-4654; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:1699-1969; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to a combination of cold and osmotic stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:4389-4654; iv) a polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:1699-1969 or 4389-4654; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv), wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to a combination of cold and osmotic stress; and regenerating a plant from the at least one plant cell.

Yet another aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct comprising i) any one of SEQ ID NOS:1970-2226 or 4655-4909; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:1970-2226; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to a combination of cold and saline stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:4655-4909; iv) a polynucleotide that has at least 90% sequence identity with one of SEQ ID NOS:1970-2226 or 4655-4909; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv), wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to a combination of cold and saline stress; and regenerating a plant from the at least one plant cell.

A further aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct comprising i) any one of SEQ ID NOS:2586-2703 or 5264-5379; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:2586-2703; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to a combination of osmotic and saline stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS: 5264-5379; iv) a polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:2586-2703 or 5264-5379; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv), wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to a combination of osmotic and saline stress; and regenerating a plant from the at least one plant cell.

Another aspect provides a method for producing a transgenic plant comprising introducing into at least one plant cell a recombinant nucleic acid construct

- comprising i) any one of SEQ ID NOS:1262-1698 or 3956-4388; ii) a polynucleotide comprising a coding region that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:1262-1698; iii) a polynucleotide comprising a sequence that alters transcription of an operatively linked coding region in response to a combination of cold, osmotic and saline stress that hybridizes under conditions of high stringency to the complement of any one of SEQ ID NOS:3956-4388; iv) a polynucleotide that has at least 90% sequence identity with any one of SEQ ID NOS:1262-1698 or 3956-4388; v) a fragment of any one of the sequences of iv), wherein the fragment comprises a coding region; or vi) a fragment of any one of the sequences of iv) wherein the fragment comprises a sequence or region that alters transcription of an operatively linked coding region in response to a combination of cold, osmotic and saline stress; and regenerating a plant from the at least one plant cell. Further aspects include plants and uniform populations of plants made by the above methods as well as seeds and progeny from such plants.
- 15 In another embodiment, a transgene introduced into a plant cell according to a method of the invention can encode a polypeptide that regulates expression from an endogenous plant stress-regulated gene. Such a polypeptide can be, for example, a recombinantly produced polypeptide comprising a zinc finger domain, which is specific for the regulatory element, and an effector domain, which can be a repressor domain or an activator domain. The polynucleotide encoding the recombinant polypeptide can be operatively linked to and expressed from a constitutively active, inducible or tissue specific or phase specific regulatory element. Expression of the recombinant polypeptide from a plant stress-regulated promoter as disclosed herein can be particularly advantageous in that the polypeptide can be coordinately expressed with the endogenous plant stress-regulated genes upon exposure to a stress condition. The invention also provides transgenic plants produced by a method as disclosed, as well as to a plant cell obtained from such transgenic plant, wherein said plant cell exhibits altered responsiveness to the stress condition; a seed produced by the transgenic plant; and a cDNA or genomic DNA library prepared from the transgenic plant, or from a plant cell from said transgenic plant, wherein said plant cell exhibits altered responsiveness to the stress condition.

In one aspect, the invention provides an isolated nucleic acid molecule comprising a nucleotide sequence substantially similar to a sequence of any one of SEQ ID NOS:2704-5379, which can alter transcription of an operatively linked polynucleotide in a plant cell in response to an abiotic stress. Additional aspects of the invention provide isolated polynucleotides, including, for example, sequences substantially similar to any of SEQ ID NOS:2704-3955, which can alter transcription of an operatively linked polynucleotide in response to a cold stress; isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:5108-5263, which can alter transcription of an operatively linked polynucleotide in response to an osmotic stress; isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:4910-5107, which can alter transcription of an operatively linked polynucleotide in response to a saline stress; isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:4389-4654, which can alter transcription of an operatively linked polynucleotide in response to a combination of cold and osmotic stresses; isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:4655-4909, which can alter transcription of an operatively linked polynucleotide in response to a combination of cold and saline stresses; isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:5264-5379, which can alter transcription of an operatively linked polynucleotide in response to a combination of osmotic and saline stresses; and isolated polynucleotides substantially similar to a sequence of any of SEQ ID NOS:3956-4388, which can alter transcription of an operatively linked polynucleotide in response to a combination of cold, osmotic and saline stresses.

Related aspects of the invention provide an isolated nucleotide sequences that can alter transcription of an operatively linked polynucleotide in response to an abiotic stress, and that hybridize under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:2704-5379. Additional aspects provide an isolated nucleotide sequence that can alter transcription of an operatively linked polynucleotide in response to cold stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:2704-3955; a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to osmotic stress, and that

hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:5108-5263; a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to saline stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:4910-5107; a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to a combination of cold and osmotic stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:4389-4654; a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to a combination of cold and saline stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:4655-4909; a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to an combination of osmotic and saline stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:5264-5379; and a nucleotide sequence that alters transcription of an operatively linked polynucleotide in response to a combination of cold, osmotic and saline stress, and that hybridizes under stringent conditions, preferably highly stringent conditions, to the complement of any one of SEQ ID NOS:3956-4388.

Further aspects provide an expression cassette comprising as operatively linked components any of the above isolated nucleic acid sequences that alter transcription, a coding region, and a termination sequence. Also provided are host cells and seeds comprising such expression cassettes, plants containing such host cells and seeds and progeny of plants containing said host cells. In related aspects, the coding region of the expression cassettes comprise sequences encoding marker proteins and sequences involved in gene silencing such as antisense sequences, double stranded RNAi sequences, a triplexing agent, and sequences comprising dominant negative mutations. In additional related aspects, the coding regions comprise sequences encoding polypeptides that alter the response of a plant to an abiotic stress.

The present invention also relates to a method of modulating the responsiveness of a plant cell to a stress condition. Such a method can be performed, for example, by introducing a polynucleotide portion of a plant stress-regulated genes

described herein into the plant cell, thereby modulating the responsiveness of the plant cell to a stress condition. Such a method can result in the responsiveness of the plant cell being increased upon exposure to the stress condition, which, in turn, can result in increased or decreased tolerance of the plant cell to a stress condition; or can
5 result in the responsiveness of the plant cell to the stress condition being decreased, which, in turn, can result in increased or decreased tolerance of the plant cell to a stress condition. In one embodiment, the polynucleotide portion of the plant stress-regulated gene can integrate into the genome of the plant cell, thereby modulating the responsiveness of the plant cell to the stress condition. In another embodiment, the
10 polynucleotide portion of the plant stress-regulated gene encodes a stress-regulated polypeptide or functional peptide portion thereof, and can be operatively linked to a heterologous promoter. The polynucleotide portion of the plant stress-regulated gene also can contain a mutation, whereby upon integrating into the plant cell genome, the polynucleotide disrupts (knocks-out) an endogenous plant stress-regulated sequence, thereby modulating the responsiveness of the plant cell to the stress condition.
15 Depending on whether the knocked-out gene encodes an adaptive or a maladaptive stress-regulated polypeptide, the responsiveness of the plant will be modulated accordingly. In still another embodiment, the polynucleotide portion of the plant stress-regulated gene can comprise a stress-regulated regulatory element, which can
20 be operatively linked to a heterologous nucleotide sequence, the expression of which can modulate the responsiveness of the plant cell to a stress condition. Such a heterologous nucleotide sequence can encode, for example, a stress-inducible transcription factor such as DREB1A. The heterologous nucleotide sequence also can encode a polynucleotide that is specific for a plant stress-regulated gene, for example,
25 an antisense molecule, an RNAi molecule, a ribozyme, and a triplexing agent, any of which, upon expression in the plant cell, reduces or inhibits expression of a stress-regulated polypeptide encoded by the gene, thereby modulating the responsiveness of the plant cell to a stress condition, for example, an abnormal level of cold, osmotic pressure, and salinity. Accordingly, the invention also relates to a plant cell obtained
30 by such a method, and to a plant comprising such a plant cell.

The present invention also relates to a method of expressing a heterologous nucleotide sequence in a plant cell. Such a method can be performed, for example, by

introducing into the plant cell a plant stress-regulated regulatory element operatively linked to the heterologous nucleotide sequence, whereby, upon exposure of the plant cell to a stress condition, the heterologous nucleotide sequence is expressed in the plant cell. In a preferred embodiment, the stress regulated element is any of the sequences described herein that are capable of altering transcription of an operatively linked sequence in response to an abiotic stress, for example, SEQ ID NOS:2704-5379. The heterologous nucleotide sequence can encode a selectable marker, a diagnostic marker, or a polypeptide that confers a desirable trait upon the plant cell, for example, a polypeptide that improves the nutritional value, digestibility or ornamental value of the plant cell, or a plant comprising the plant cell.

The present invention further relates to a method of modulating the activity of a biological pathway in a plant cell, wherein the pathway involves a stress-regulated polypeptide or a non-protein regulatory molecule. Such a method can be performed by introducing a polynucleotide portion of a plant stress-regulated gene, or a polynucleotide derived therefrom, for example a ribozyme derived from a nucleotide sequence as set forth in any of SEQ ID NOS:1-2703, into the plant cell, thereby modulating the activity of the biological pathway. The method can be performed with respect to a pathway involving any of the stress-regulated polypeptides as disclosed herein or encoded by the polynucleotides disclosed herein, as well as using homologs or orthologs thereof.

The present invention also relates to a method of identifying a polynucleotide that modulates a stress response in a plant cell. In one embodiment the method comprises determining gene expression in a plant exposed to at least one stress to produce an expression profile and identifying sequences whose expression is altered at least two fold compared to plants not exposed to the stress. Such an expression profile can be obtained, for example, by contacting an array of probes representative of a plant cell genome with nucleic acid molecules expressed in a plant cell exposed to the stress; and detecting one or more nucleic acid molecules expressed at a level different from a level of expression in the absence of the stress. The method can further comprise introducing the differentially expressed nucleic acid molecule into a plant cell; and detecting a modulated response of the genetically modified plant cell to a stress, thereby identifying a polynucleotide that modulates a stress response in a

plant cell. The stress can be any stress, for example, an abiotic stress such as exposure to an abnormal level of cold, osmotic pressure, and salinity. The contacting is under conditions that allow for selective hybridization of a nucleic acid molecule with probe having sufficient complementarity, for example, under stringent

- 5 hybridization conditions. Expression of the nucleic acid molecule can increase or decrease the tolerance of the plant cell to the stress, and the nucleic acid molecule can be expressed at a level that is less than or greater than the level of expression in the absence of the stress.

- The present invention additionally relates to a method of identifying a stress
- 10 condition to which a plant cell was exposed by comparing an expression profile from a test plant suspected of having been exposed to at least one stress condition to an expression profile obtained from a reference plant, preferably of the same species, which has been exposed to the suspected stress condition. Such a method can be performed, for example, by contacting nucleic acid molecules expressed in the test
- 15 plant cell with an array of probes representative of the plant cell genome; detecting a profile of expressed nucleic acid molecules characteristic of a stress response, and comparing the expression pattern in the test plant to the expression pattern obtained from a reference plant thereby identifying the stress condition to which the plant cell was exposed. The contacting is under conditions that allow for selective
- 20 hybridization of a nucleic acid molecule with probes having sufficient complementarity, for example, under stringent hybridization conditions. The profile can be characteristic of exposure to a single stress condition, for example, an abnormal level of cold, osmotic pressure, or salinity, or can be characteristic of exposure to more than one stress condition, for example, cold, increased osmotic
- 25 pressure and increased salinity. In one embodiment, the nucleotide sequence of a gene whose expression is detected is selected from a polynucleotide comprising any of SEQ ID NOS:1-2703. In further embodiments, the nucleotide sequence of a gene that is expressed in response a particular stress or combination of stresses can comprise a polynucleotide expressed in response to cold stress (SEQ ID
- 30 NOS:1-1261), osmotic stress (SEQ ID NOS:2428-2585), saline (salt) stress (SEQ ID NOS:2227-2427), a combination of cold and osmotic stress (SEQ ID NOS:1699-1969), a combination of saline and osmotic stress (SEQ ID NOS:1970-

2226), a combination of osmotic and saline stress (SEQ ID NOS:2586-2703), or a combination of cold, osmotic and saline stress (SEQ ID NOS:1262-1698).

The present invention further relates to a transgenic plant, which contains a nucleic acid construct comprising a polynucleotide portion of plant stress-regulated
5 polynucleotide. In one embodiment, the transgenic plant exhibits altered responsiveness to a stress condition as compared to a corresponding reference plant not containing the construct. Such a transgenic plant can contain, for example, a construct that disrupts an endogenous stress-regulated gene in the plant, thereby reducing or inhibiting expression of the gene in response to a stress condition. Such a knock-out can increase or decrease
10 tolerance of the plant to a stress condition. The transgene also can comprise a coding sequence of a plant stress-regulated gene, which can be operatively linked to a heterologous regulatory element such as a constitutively active regulatory element, an regulated regulatory element, a tissues specific or phase specific regulatory element, or the like. In another embodiment, the transgenic plant contains a nucleic acid construct
15 comprising a plant stress-regulated regulatory element, which can be operatively linked to a heterologous nucleotide sequence that can encode a polypeptide. Expression of the heterologous polypeptide can confer a desirable characteristic on the plant, for example, can improve the nutritional or ornamental value of the transgenic plant. In still another embodiment, the transgenic plant contains multiple nucleic acid constructs, which can be
20 multiple copies of the same construct, or can be two or more different constructs.

The present invention also relates to a plant stress-regulated regulatory element, which is obtained from a plant stress-regulated polynucleotide disclosed herein for example any of SEQ ID NOS:2704-5379; a homolog or ortholog thereof. The invention also provides a method of identifying an agent, for example a transcription factor, that
25 specifically binds to or activates a plant stress-regulated regulatory element. Such a method can be performed, for example, by contacting the regulatory element with a plant cell extract, and identifying polypeptides that specifically bind to the regulatory element. Confirmation that the specifically binding polypeptide is a transcription factor can be demonstrated using, for example, the stress-regulated regulatory element
30 operably linked to a reporter gene, and detecting expression of the reporter gene. Control constructs comprising a regulatory element, other than a plant stress-regulated regulatory element, operatively linked to a reporter molecule can be used to confirm

that the transcription factor is specific for the plant stress-regulated regulatory element. A polynucleotide encoding such a transcription factor also can be obtained.

The present invention also relates to a method of using a polynucleotide portion of a plant stress-regulated gene to confer a selective advantage on a plant cell.

- 5 In one embodiment, such a method is performed by introducing a plant stress-regulated regulatory element into a plant cell such as those described herein, wherein, upon exposure of the plant cell to a stress condition to which the regulatory element is responsive, a nucleotide sequence operatively linked to the regulatory element is expressed, thereby conferring a selective advantage to plant cell. The operatively
- 10 linked nucleotide sequence can be, for example, a transcription factor, the expression of which induces the further expression of polynucleotides involved in a stress response, thereby enhancing the response of a plant to the stress condition. In another embodiment, a coding sequence of a plant stress-regulated gene as disclosed herein is introduced into the cell, thereby providing the plant with a selective advantage in
- 15 response to a stress condition. In still another embodiment, the method results in the knock-out of a plant stress-regulated gene as disclosed herein in a first population of plants, thereby providing a selective advantage to a stress condition in a second population of plants.

- The invention further relates to a method of identifying an agent that
- 20 modulates the activity of a stress-regulated regulatory element of a plant. In a particular embodiment, is provided a method for identifying an agent that alters the activity of an abiotic stress responsive regulatory element comprising contacting the agent or a composition containing an agent to be tested with at least one abiotic stress responsive regulatory element, preferably selected from the group consisting of SEQ
- 25 ID NOS:2704-5379 (see Table 2), and determining the effect of the agent on the ability of the regulatory sequence to regulate transcription. In further embodiments, the regulatory elements are associated with particular stresses or combination of stresses such as cold stress (SEQ ID NOS:2704-3955), osmotic stress (SEQ ID NOS:5108-5263), saline stress (SEQ ID NOS:4910-5107), a combination of cold and
- 30 osmotic stress (SEQ ID NOS:4389-4654), a combination of cold and saline stress (SEQ ID NOS:4655-4909), a combination of osmotic and saline stress (SEQ ID NOS:5264-5379), or a combination of cold, osmotic and saline stress (SEQ ID

NOS:3956-4388). In one embodiment, the regulatory element can be operatively linked to a heterologous polynucleotide encoding a reporter molecule, and an agent that modulates the activity of the stress-regulated regulatory element can be identified by detecting a change in expression of the reporter molecule due to contacting the regulatory element with the agent. Such a method can be performed *in vitro* in a plant cell-free system, or in a plant cell in culture or in a plant *in situ*. In another embodiment, the agent is contacted with a transgenic plant containing an introduced plant stress-regulated regulatory element, and an agent that modulates the activity of the regulatory element is identified by detecting a phenotypic change in the transgenic plant. The methods of the invention can be performed in the presence or absence of the stress condition to which the particularly regulatory element is responsive.

Another aspect provides a method for identifying an agent that alters abiotic stress responsive polynucleotide expression in a plant or plant cell comprising contacting a plant or plant cell with a test agent; subjecting the plant cell or plant cell to an abiotic stress or combination of stresses before, during or after contact with the agent to be tested; obtaining an expression profile of the plant or plant cell and comparing the expression profile of the plant or plant cell to an expression profile from a plant or plant cell not exposed to the abiotic stress or combination of stresses. In one embodiment, the expression profile comprises expression data for at least one nucleotide sequence comprising any of SEQ ID NOS:1-5379 (see Tables 1 and 2). In additional embodiments, the expression profile comprises expression data for at least one, and preferably two or more sequences associated with a particular abiotic stress or combination of stresses such as cold stress (SEQ ID NOS:1-1261 and 2704-3955), osmotic stress (SEQ ID NOS:2428-2585 and 5108-5263), saline stress (SEQ ID NOS:2227-2427 and 4910-5107), a combination of cold and osmotic stress (SEQ ID NOS:1699-1969 and 4389-4654), a combination of cold and saline stress (SEQ ID NOS:1970-2226 and 4655-4909), a combination of osmotic and saline stress (SEQ ID NOS:2586-2703 and 5264-5379), or a combination of cold, osmotic and saline stress (SEQ ID NOS:1262-1698 and 3956-4388).

Still another aspect provides nucleotide probes useful for detecting an abiotic stress response in plants, the probes comprising a nucleotide sequence of at least 15, 25, 50 or 100 nucleotides that hybridizes under stringent, preferably highly stringent,

conditions to at least one sequence comprising any of SEQ ID NOS:1-2703. Also provided are nucleotide probes comprising at least 15, 25, 50 or 100 nucleotides in length that hybridize under stringent, preferably highly stringent conditions, to at least one gene associated with a particular stress or combination of stresses, for example cold stress, (SEQ ID NOS:1-1261), osmotic stress (SEQ ID NOS:2428-2585), saline stress (SEQ ID NOS:2227-2427), a combination of cold and osmotic stress (SEQ ID NOS:1699-1969), a combination of cold and saline stress (SEQ ID NOS:1970-2226), a combination of osmotic and saline stress (SEQ ID NOS:2586-2703), or a combination of cold, osmotic, and saline stress (SEQ ID NOS:1262-1698).

An additional aspect provides a method for marker-assisted breeding to select plants having an altered resistance to abiotic stress comprising obtaining nucleic acid molecules from the plants to be selected; contacting the nucleic acid molecules with one or more probes that selectively hybridize under stringent, preferably highly stringent, conditions to a nucleic acid sequence selected from the group consisting of SEQ ID NOS:1-2703; detecting the hybridization of the one or more probes to the nucleic acid sequences wherein the presence of the hybridization indicates the presence of a gene associated with altered resistance to abiotic stress; and selecting plants on the basis of the presence or absence of such hybridization. Marker-assisted selection can also be accomplished using one or more probes which selectively hybridize under stringent, preferably highly stringent conditions, to a nucleotide sequence comprising a polynucleotide expressed in response associated with a particular stress, for example, a nucleotide sequence comprising any of SEQ ID NOS:1-1261 (cold stress), SEQ ID NOS:2428-2585 (osmotic stress), SEQ ID NOS:2227-2427 (saline stress), SEQ ID NOS:1699-1969 (cold and osmotic stress), SEQ ID NOS:1970-2226 (cold and saline stress), SEQ ID NOS:2586-2703 (osmotic and saline stress), or SEQ ID NOS:1262-1698 (cold, osmotic and saline stress). In each case marker-assisted selection can be accomplished using a probe or probes to a single sequence or multiple sequences. If multiple sequences are used they can be used simultaneously or sequentially.

A further aspect provides a method for monitoring a population of plants comprising providing at least one sentinel plant containing a recombinant polynucleotide comprising a stress responsive regulatory sequence selected from the

group consisting of SEQ ID NOS:2704-5379 which is operatively linked to a nucleotide sequence encoding a detectable marker, for example a fluorescent protein. Additional aspects provide the use of various regulatory sequences including those associated with cold stress (SEQ ID NOS:2704-3955), osmotic stress (SEQ ID NOS:5108-5263), saline stress (SEQ ID NOS:4910-5107), cold and osmotic stress (SEQ ID NOS:4389-4654), cold and saline stress (SEQ ID NOS:4655-4909), osmotic and saline stress (SEQ ID NOS:5264-5379), and cold, osmotic and saline stress (SEQ ID NOS:3956-4388), or fragments thereof wherein such fragments can alter transcription of an operatively linked nucleotide sequence in response to an abiotic stress.

A further aspect provides a computer readable medium having stored thereon computer executable instructions for performing a method comprising receiving data on gene expression in a test plant of at least one nucleic acid molecule having at least 70%, preferably at least 80%, more preferably at least 90%, and most preferably at least 95% nucleotide sequence identity to one or more polynucleotide sequences as set forth in any of SEQ ID NOS:1-2703; and comparing expression data from the test plant to expression data for the same polynucleotide sequence or sequences in a plant that has been exposed to at least one abiotic stress.

Yet a further aspect provides a computer readable medium having stored thereon a data structure comprising, sequence data for at least one, and preferably a plurality of nucleic acid molecules having at least 70%, preferably at least 80%, more preferably at least 90%, and most preferably at least 95% nucleotide sequence identity to a polynucleotide comprising any of SEQ ID NOS:1-2703, or the complement thereof; and a module receiving the nucleic acid molecule sequence data which compares the nucleic acid molecule sequence data to at least one other nucleic acid sequence.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to clusters of genes that are induced in response to one or a combination of abiotic stress conditions. Abiotic stress conditions, such as a shortage or excess of solar energy, water and nutrients, and salinity, high and low temperature, or pollution (e.g., heavy metals), can have a major impact on plant growth and can significantly reduce the yield, for example, of cultivars. Under

conditions of abiotic stress, the growth of plant cells is inhibited by arresting the cell cycle in late G1, before DNA synthesis, or at the G2/M boundary (see Dudits, Plant Cell Division, Portland Press Research, Monograph; Francis, Dudits, and Inze, eds., 1997; chap. 2, page 21; Bergounioux, Protoplasma 142:127-136, 1988). The

5 identification of stress-regulated gene clusters, using microarray technology, provides a means to identify plant stress-regulated genes.

As used herein, the term "cluster," when used in reference to stress-regulated genes, refers to nucleotide sequences of genes that have been selected by drawing Venn diagrams, and selecting those genes that are regulated only by a selected stress condition.

10 In general, a cluster of stress-regulated genes includes at least 5, 10, 15, or 20 genes, including polynucleotide portions thereof, each of which is responsive to the same selected stress condition or conditions. The selected stress condition can be a single stress condition, for example, cold, osmotic stress or salinity stress (see Tables 3-14), or can be a selected combination of stress conditions, for example, cold, osmotic stress and

15 salinity stress (see Tables 15-26). In addition, a cluster can be selected based on specifying that all of the genes are coordinately regulated, for example, they all start at a low level and are induced to a higher level. However, a cluster of saline stress-regulated genes, for example, that was selected for coordinate regulation from low to high, also can be decreased in response to cold or mannitol. By varying the parameters used for

20 selecting a cluster of gene nucleotide sequences, those genes that are expressed in a specific manner following a stress can be identified.

As used herein in reference to a polynucleotide or polynucleotide portion of a gene or nucleic acid molecule, the term "isolated" means a polynucleotide, polynucleotide portion of a gene, or nucleic acid molecule that is free of one or both

25 of the nucleotide sequences that normally flank the polynucleotide in a genome of a naturally-occurring organism from which the polynucleotide is derived. The term includes, for example, a polynucleotide or fragment thereof that is incorporated into a vector or expression cassette; into an autonomously replicating plasmid or virus; into the genomic DNA of a prokaryote or eukaryote; or that exists as a separate molecule

30 independent of other polynucleotides. It also includes a recombinant polynucleotide that is part of a hybrid polynucleotide, for example, one encoding a polypeptide sequence.

The terms "polynucleotide," "oligonucleotide," and "nucleic acid sequence" are used interchangeably herein to refer to a polymeric (2 or more monomers) form of nucleotides of any length, either ribonucleotides or deoxyribonucleotides. Although nucleotides are usually joined by phosphodiester linkages, the term also includes

5 polymers containing neutral amide backbone linkages composed of aminoethyl glycine units. The terms are used only to refer to the primary structure of the molecule. Thus, the term includes double stranded and single stranded DNA molecules, including a sense strand or an antisense strand, and RNA molecules as well as genomic DNA, cDNA, mRNA and the like. It will be recognized that such

10 polynucleotides can be modified, for example, by including a label such as a radioactive, fluorescent or other tag, by methylation, by the inclusion of a cap structure, by containing a substitution of one or more of the naturally occurring nucleotides with a nucleotide analog, by containing an internucleotide modification such as having uncharged linkages (e.g., methyl phosphonates, phosphotriesters,

15 phosphoramidates, carbamates, or the like), by containing a pendant moiety such as a protein (e.g., a nuclease, toxin, antibody, signal peptide, poly-L-lysine, or the like), by containing an intercalator such as acridine or psoralen, by containing a chelator, which can be a metal such as boron, an oxidative metal, or a radioactive metal, by containing an alkylator, or by having a modified linkage (e.g., an alpha anomeric

20 nucleic acid).

The term "recombinant nucleic acid molecule" refers to a polynucleotide produced by human intervention. A recombinant nucleic acid molecule can contain two or more nucleotide sequences that are linked in a manner such that the product is not found in a cell in nature. In particular, the two or more nucleotide sequences can

25 be operatively linked and, for example, can encode a fusion polypeptide, or can comprise a nucleotide sequence and a regulatory element. A recombinant nucleic acid molecule also can be based on, but different, from a naturally occurring polynucleotide, for example, a polynucleotide having one or more nucleotide changes such that a first codon, which normally is found in the polynucleotide, is replaced

30 with a degenerate codon that encodes the same or a conservative amino acid, or such that a sequence of interest is introduced into the polynucleotide, for example, a

restriction endonuclease recognition site or a splice site, a promoter, a DNA replication initiation site, or the like.

As used herein, the term "abiotic stress" or "abiotic stress condition" refers to the exposure of a plant, plant cell, or the like, to a non-living ("abiotic") physical or chemical agent or condition that has an adverse effect on metabolism, growth, development, propagation and/or survival of the plant (collectively "growth"). An abiotic stress can be imposed on a plant due, for example, to an environmental factor such as water (e.g., flooding, drought, dehydration), anaerobic conditions (e.g., a low level of oxygen), abnormal osmotic conditions, salinity or temperature (e.g., hot/heat, cold, freezing, frost), a deficiency of nutrients or exposure to pollutants, or by a hormone, second messenger or other molecule. Anaerobic stress, for example, is due to a reduction in oxygen levels (hypoxia or anoxia) sufficient to produce a stress response. A flooding stress can be due to prolonged or transient immersion of a plant, plant part, tissue or isolated cell in a liquid medium such as occurs during monsoon, wet season, flash flooding or excessive irrigation of plants, or the like. A cold stress or heat stress can occur due to a decrease or increase, respectively, in the temperature from the optimum range of growth temperatures for a particular plant species. Such optimum growth temperature ranges are readily determined or known to those skilled in the art. Dehydration stress can be induced by the loss of water, reduced turgor, or reduced water content of a cell, tissue, organ or whole plant. Drought stress can be induced by or associated with the deprivation of water or reduced supply of water to a cell, tissue, organ or organism. Saline stress (salt stress) can be associated with or induced by a perturbation in the osmotic potential of the intracellular or extracellular environment of a cell. Osmotic stress also can be associated with or induced by a change, for example, in the concentration of molecules in the intracellular or extracellular environment of a plant cell, particularly where the molecules cannot be partitioned across the plant cell membrane.

As disclosed herein, clusters of plant stress-regulated genes (Example 1; see, also, Tables 1-31) and homologs and orthologs thereof (Table 32) have been identified. Remarkably, several of the stress-regulated genes previously were known to encode polypeptides having defined cellular functions, including roles as transcription factors, enzymes such as kinases, and structural proteins such as channel proteins (see

- Tables 29-31). The identification of *Arabidopsis* stress-regulated genes provides a means to identify homologous and orthologous genes and gene sequences in other plant species using well known procedures and algorithms based on identity (or homology) to the disclosed sequences. Thus, the invention provides polynucleotide sequences
- 5 comprising plant stress-regulated genes that are homologs or orthologs, variants, or otherwise substantially similar to the polynucleotides disclosed herein, and having an E value $\leq 1 \times 10^{-8}$, which can be identified, for example, by a BLASTN search using the *Arabidopsis* polynucleotides of Tables 1 and 2 (SEQ ID NOS:1-5379) as query sequences (see Table 32).
- 10 A polynucleotide sequence of a stress-regulated gene as disclosed herein can be particularly useful for performing the methods of the invention on a variety of plants, including but not limited to, corn (*Zea mays*), *Brassica* sp. (e.g., *B. napus*, *B. rapa*, *B. juncea*), particularly those *Brassica* species useful as sources of seed oil, alfalfa (*Medicago sativa*), rice (*Oryza sativa*), rye (*Secale cereale*), sorghum
- 15 (*Sorghum bicolor*, *Sorghum vulgare*), millet (e.g., pearl millet (*Pennisetum glaucum*), proso millet (*Panicum miliaceum*), foxtail millet (*Setaria italica*), finger millet (*Eleusine coracana*)), sunflower (*Helianthus annuus*), safflower (*Carthamus tinctorius*), wheat (*Triticum aestivum*), soybean (*Glycine max*), tobacco (*Nicotiana tabacum*), potato (*Solanum tuberosum*), peanuts (*Arachis hypogaea*), cotton
- 20 (*Gossypium barbadense*, *Gossypium hirsutum*), sweet potato (*Ipomoea batatas*), cassava (*Manihot esculenta*), coffee (*Cofea* spp.), coconut (*Cocos nucifera*), pineapple (*Ananas comosus*), citrus trees (*Citrus* spp.), cocoa (*Theobroma cacao*), tea (*Camellia sinensis*), banana (*Musa* spp.), avocado (*Persea utiliane*), fig (*Ficus casica*), guava (*Psidium guajava*), mango (*Mangifera indica*), olive (*Olea europaea*),
- 25 papaya (*Carica papaya*), cashew (*Anacardium occidentale*), macadamia (*Macadamia integrifolia*), almond (*Prunus amygdalus*), sugar beets (*Beta vulgaris*), sugarcane (*Saccharum* spp.), oats, duckweed (*Lemna*), barley, tomatoes (*Lycopersicon esculentum*), lettuce (e.g., *Lactuca sativa*), green beans (*Phaseolus vulgaris*), lima beans (*Phaseolus limensis*), peas (*Lathyrus* spp.), and members of the genus *Cucumis*
- 30 such as cucumber (*C. sativus*), cantaloupe (*C. cantalupensis*), and musk melon (*C. melo*). Ornamentals such as azalea (*Rhododendron* spp.), hydrangea (*Macrophylla hydrangea*), hibiscus (*Hibiscus rosasansensis*), roses (*Rosa* spp.), tulips (*Tulipa* spp.),

- daffodils (*Narcissus* spp.), petunias (*Petunia hybrida*), carnation (*Dianthus caryophyllus*), poinsettia (*Euphorbia pulcherrima*), and chrysanthemum are also included. Additional ornamentals within the scope of the invention include impatiens, Begonia, Pelargonium, Viola, Cyclamen, Verbena, Vinca, Tagetes, Primula, Saint
- 5 Paulia, Agertum, Amaranthus, Antihirrhinum, Aquilegia, Cineraria, Clover, Cosmo, Cowpea, Dahlia, Datura, Delphinium, Gerbera, Gladiolus, Gloxinia, Hippeastrum, Mesembryanthemum, Salpiglossos, and Zinnia. Conifers that may be employed in practicing the present invention include, for example, pines such as loblolly pine (*Pinus taeda*), slash pine (*Pinus elliotii*), ponderosa pine (*Pinus ponderosa*),
- 10 lodgepole pine (*Pinus contorta*), and Monterey pine (*Pinus radiata*), Douglas-fir (*Pseudotsuga menziesii*); Western hemlock (*Tsuga utililane*); Sitka spruce (*Picea glauca*); redwood (*Sequoia sempervirens*); true firs such as silver fir (*Abies amabilis*) and balsam fir (*Abies balsamea*); and cedars such as Western red cedar (*Thuja plicata*) and Alaska yellow-cedar (*Chamaecyparis nootkatensis*).
- 15 Leguminous plants which may be used in the practice of the present invention include beans and peas. Beans include guar, locust bean, fenugreek, soybean, garden beans, cowpea, mung bean, lima bean, fava bean, lentils, chickpea, etc. Legumes include, but are not limited to, *Arachis*, e.g., peanuts, *Vicia*, e.g., crown vetch, hairy vetch, adzuki bean, mung bean, and chickpea, *Lupinus*, e.g., lupine, trifolium,
- 20 *Phaseolus*, e.g., common bean and lima bean, *Pisum*, e.g., field bean, *Melilotus*, e.g., clover, *Medicago*, e.g., alfalfa, *Lotus*, e.g., trefoil, lens, e.g., lentil, and false indigo. Preferred forage and turf grass for use in the methods of the invention include alfalfa, orchard grass, tall fescue, perennial ryegrass, creeping bent grass, and reedtop.
- Other plants within the scope of the invention include *Acacia*, aneth,
- 25 artichoke, arugula, blackberry, canola, cilantro, clementines, escarole, eucalyptus, fennel, grapefruit, honey dew, jicama, kiwifruit, lemon, lime, mushroom, nut, okra, orange, parsley, persimmon, plantain, pomegranate, poplar, radiata pine, radichio, Southern pine, sweetgum, tangerine, vine, yams, apple, pear, quince, cherry, apricot, melon, hemp, buckwheat, grape, raspberry, chenopodium, blueberry,
- 30 nectarine, peach, plum, strawberry, watermelon, eggplant, pepper, cauliflower, Brassica, e.g., broccoli, cabbage, ultilan sprouts, onion, carrot, leek, beet, broad bean,

celery, radish, pumpkin, endive, gourd, garlic, snapbean, spinach, squash, turnip, uditlane, chicory, groundnut and zucchini.

As used herein, the term "substantially similar", when used herein with respect to a nucleotide sequence, means a nucleotide sequence corresponding to a reference
5 nucleotide sequence, wherein the corresponding sequence encodes a polypeptide or comprises a regulatory element having substantially the same structure and function as the polypeptide encoded by the reference nucleotide sequence, for example, where only changes in amino acids not affecting the polypeptide function occur. For purposes of the present invention, a reference (or query) sequence is a polynucleotide
10 sequence as set forth in any of SEQ ID NOS:1-2703 or a polypeptide encoded thereby. Desirably, a substantially similar nucleotide sequence encodes the polypeptide encoded by the reference nucleotide sequence. The percentage of identity between the substantially similar nucleotide sequence and the reference nucleotide sequence desirably is at least 60%, more desirably at least 75%, preferably at least
15 90%, more preferably at least 95%, still more preferably at least 99% and including 100%. A nucleotide sequence is "substantially similar" to reference nucleotide sequence hybridizes to the reference nucleotide sequence in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 2X SSC, 0.1% SDS at 50°C, more desirably in 7% sodium dodecyl sulfate (SDS),
20 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 1X SSC, 0.1% SDS at 50°C (stringent conditions), more desirably still in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.5X SSC, 0.1% SDS at 50°C (high stringency), preferably in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.1X SSC, 0.1% SDS at 50°C (very high
25 stringency), more preferably in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.1X SSC, 0.1% SDS at 65°C (extremely high stringency).

In addition, the term "substantially similar," when used in reference to a polypeptide sequence, means that an amino acid sequence relative to a reference (query)
30 sequence shares at least about 65% amino acid sequence identity, particularly at least about 75% amino acid sequence identity, and preferably at least about 85%, more

preferably at least about 90% , and most preferably at least about 95% or greater amino acid sequence identity. Generally, sequences having an $E \leq 10^{-8}$ are considered to be substantially similar to a query sequence. Such sequence identity can take into account conservative amino acid changes that do not substantially affect the function of a polypeptide. As such, homologs or orthologs of the *Arabidopsis* stress-regulated nucleotide sequences disclosed herein, variants thereof, and polypeptides substantially similar to the polynucleotide sequence of *Arabidopsis* stress-regulated genes set forth in SEQ ID NOS:1-5379 are encompassed within the present invention and, therefore, useful for practicing the methods of the invention (see, for example, Table 32).

Homology or identity is often measured using sequence analysis software such as the Sequence Analysis Software Package of the Genetics Computer Group (University of Wisconsin Biotechnology Center, 1710 University Avenue, Madison, WI 53705). Such software matches similar sequences by assigning degrees of homology to various deletions, substitutions and other modifications. The terms "homology" and "identity," when used herein in the context of two or more nucleic acids or polypeptide sequences, refer to two or more sequences or subsequences that are the same or have a specified percentage of amino acid residues or of nucleotides that are the same when compared and aligned for maximum correspondence over a comparison window or designated region as measured using any number of sequence comparison algorithms or by manual alignment and visual inspection.

For sequence comparison, typically one sequence acts as a reference sequence, to which test sequences are compared. When using a sequence comparison algorithm, test and reference sequences are entered into a computer, subsequence coordinates are designated, if necessary, and sequence algorithm program parameters are designated. Default program parameters can be used, or alternative parameters can be designated. The sequence comparison algorithm then calculates the percent sequence identities for the test sequences relative to the reference sequence, based on the program parameters.

The term "comparison window" is used broadly herein to include reference to a segment of any one of the number of contiguous positions, for example, about 20 to 600 positions, for example, amino acid or nucleotide position, usually about 50 to about 200 positions, more usually about 100 to about 150 positions, in which a sequence may be compared to a reference sequence of the same number of contiguous positions

after the two sequences are optimally aligned. Methods of alignment of sequence for comparison are well-known in the art. Optimal alignment of sequences for comparison can be conducted, for example, by the local homology algorithm of Smith and Waterman (Adv. Appl. Math. 2:482, 1981), by the homology alignment algorithm of Needleman and Wunsch (J. Mol. Biol. 48:443, 1970), by the search for similarity method of Person and Lipman (Proc. Natl. Acad. Sci., USA 85:2444, 1988), each of which is incorporated herein by reference; by computerized implementations of these algorithms (GAP, BESTFIT, FASTA, and TFASTA in the Wisconsin Genetics Software Package, Genetics Computer Group, 575 Science Dr., Madison, WI); or by manual alignment and visual inspection. Other algorithms for determining homology or identity include, for example, in addition to a BLAST program (Basic Local Alignment Search Tool at the National Center for Biological Information), ALIGN, AMAS (Analysis of Multiply Aligned Sequences), AMPS (Protein Multiple Sequence Alignment), ASSET (Aligned Segment Statistical Evaluation Tool), BANDS, BESTSCOR, BIOSCAN (Biological Sequence Comparative Analysis Node), BLIMPS (BLOCKS IMProved Searcher), FASTA, Intervals & Points, BMB, CLUSTAL V, CLUSTAL W, CONSENSUS, LCONSENSUS, WCONSENSUS, Smith-Waterman algorithm, DARWIN, Las Vegas algorithm, FNAT (Forced Nucleotide Alignment Tool), Framealign, Framesearch, DYNAMIC, FILTER, FSAP (Fristensky Sequence Analysis Package), GAP (Global Alignment Program), GENAL, GIBBS, GenQuest, ISSC (Sensitive Sequence Comparison), LALIGN (Local Sequence Alignment), LCP (Local Content Program), MACAW (Multiple Alignment Construction & Analysis Workbench), MAP (Multiple Alignment Program), MBLKP, MBLKN, PIMA (Pattern-Induced Multi-sequence Alignment), SAGA (Sequence Alignment by Genetic Algorithm) and WHAT-IF. Such alignment programs can also be used to screen genome databases to identify polynucleotide sequences having substantially identical sequences.

A number of genome databases are available for comparison. Several databases containing genomic information annotated with some functional information are maintained by different organizations, and are accessible via the internet, for example, at world wide web addresses (url's) "www.tigr.org/tdb"; "genetics.wisc.edu";

"genome-www.stanford.edu/~ball"; "hiv-web.lanl.gov"; "ncbi.nlm.nih.gov"; "ebi.ac.uk"; "Pasteur.fr/other/biology"; and "genome.wi.mit.edu".

In particular, the BLAST and BLAST 2.0 algorithms using default parameters are particularly useful for identifying polynucleotide and polypeptides encompassed within the present invention (Altschul et al. (Nucleic Acids Res. 25:3389-3402, 1977; J. Mol. Biol. 215:403-410, 1990, each of which is incorporated herein by reference). Software for performing BLAST analyses is publicly available through the National Center for Biotechnology Information (<http://www.ncbi.nlm.nih.gov>). This algorithm involves first identifying high scoring sequence pairs (HSPs) by identifying short words of length W in the query sequence, which either match or satisfy some positive-valued threshold score T when aligned with a word of the same length in a database sequence. T is referred to as the neighborhood word score threshold (Altschul et al., *supra*, 1977, 1990). These initial neighborhood word hits act as seeds for initiating searches to find longer HSPs containing them. The word hits are extended in both directions along each sequence for as far as the cumulative alignment score can be increased. Cumulative scores are calculated using, for nucleotide sequences, the parameters M (reward score for a pair of matching residues; always >0). For amino acid sequences, a scoring matrix is used to calculate the cumulative score. Extension of the word hits in each direction are halted when: the cumulative alignment score falls off by the quantity X from its maximum achieved value; the cumulative score goes to zero or below, due to the accumulation of one or more negative-scoring residue alignments; or the end of either sequence is reached. The BLAST algorithm parameters W, T, and X determine the sensitivity and speed of the alignment. The BLASTN program (for nucleotide sequences) uses as defaults a wordlength (W) of 11, an expectation (E) of 10, M=5, N=4 and a comparison of both strands. For amino acid sequences, the BLASTP program uses as defaults a wordlength of 3, and expectations (E) of 10, and the BLOSUM62 scoring matrix (see Henikoff and Henikoff, Proc. Natl. Acad. Sci., USA 89:10915, 1989) alignments (B) of 50, expectation (E) of 10, M=5, N=4, and a comparison of both strands.

The BLAST algorithm also performs a statistical analysis of the similarity between two sequences (see, for example, Karlin and Altschul, Proc. Natl. Acad. Sci., USA 90:5873, 1993, which is incorporated herein by reference). One measure of

similarity provided by BLAST algorithm is the smallest sum probability ($P(N)$), which provides an indication of the probability by which a match between two nucleotide or amino acid sequences would occur by chance. For example, a nucleic acid is considered similar to a reference sequence if the smallest sum probability in a comparison of the test nucleic acid to the reference nucleic acid is less than about 0.2, more preferably less than about 0.01, and most preferably less than about 0.001. Significantly, upon identifying polynucleotides that are substantially similar to those of SEQ ID NOS:1-5379, the identified polynucleotides can be used as query sequences in a BLAST search to identify polynucleotides and polypeptides substantially similar thereto.

It should be noted that the nucleotide sequences set forth as SEQ ID NOS:1-2703 comprise coding sequences, whereas the nucleotide sequences set forth as SEQ ID NOS:2704-5379 comprise regulatory sequences. In addition, the coding sequences and regulatory sequences are related in that, for example, SEQ ID NO:1 is the coding sequence of a plant cold regulated gene having a 5' upstream (regulatory) sequence set forth as SEQ ID NO:2704 (see Table 2). Similarly, SEQ ID NO:2705 comprises a regulatory region of SEQ ID NO:2, SEQ ID NO:2706 comprises a regulatory region of SEQ ID NO:3, and so forth as shown in Table 2. As such, reference herein, for example, to a "polynucleotide comprising SEQ ID NO:1" can, unless indicated otherwise, include at least SEQ ID NO:2704. In some cases, the entire coding region of a plant stress regulated gene or the 5' upstream sequence has not yet been determined (see, for example, SEQ ID NO:43 in Table 3, where "none" indicates that 5' upstream regulatory sequences have not yet been determined). However, the determination of a complete coding sequence where only a portion is known or of regulatory sequences where a portion of the coding sequence is known can be made using methods as disclosed herein or otherwise known in the art.

In one embodiment, protein and nucleic acid sequence homologies are evaluated using the Basic Local Alignment Search Tool ("BLAST"). In particular, five specific BLAST programs are used to perform the following task:

(1) BLASTP and BLAST3 compare an amino acid query sequence against a protein sequence database;

(2) BLASTN compares a nucleotide query sequence against a nucleotide sequence database;

(3) BLASTX compares the six-frame conceptual translation products of a query nucleotide sequence (both strands) against a protein sequence database;

(4) TBLASTN compares a query protein sequence against a nucleotide sequence database translated in all six reading frames (both strands); and

5 (5) TBLASTX compares the six-frame translations of a nucleotide query sequence against the six-frame translations of a nucleotide sequence database.

The BLAST programs identify homologous sequences by identifying similar segments, which are referred to herein as "high-scoring segment pairs," between a query amino or nucleic acid sequence and a test sequence which is preferably
10 obtained from a protein or nucleic acid sequence database. High-scoring segment pairs are preferably identified (*i.e.*, aligned) by means of a scoring matrix, many of which are known in the art. Preferably, the scoring matrix used is the BLOSUM62 matrix (Gonnet et al., Science 256:1443-1445, 1992; Henikoff and Henikoff, Proteins 17:49-61, 1993, each of which is incorporated herein by reference). Less preferably,
15 the PAM or PAM250 matrices may also be used (Schwartz and Dayhoff, eds., "Matrices for Detecting Distance Relationships: Atlas of Protein Sequence and Structure" (Washington, National Biomedical Research Foundation 1978)). BLAST programs are accessible through the U.S. National Library of Medicine, for example, on the world wide web at address (url) "ncbi.nlm.nih.gov".

20 The parameters used with the above algorithms may be adapted depending on the sequence length and degree of homology studied. In some embodiments, the parameters may be the default parameters used by the algorithms in the absence of instructions from the user.

The term "substantially similar" also is used in reference to a comparison of
25 expression profiles of nucleotide sequences, wherein a determination that an expression profile characteristic of a stress response is substantially similar to the profile of nucleic acid molecules expressed in a plant cell being examined ("test plant") is indicative of exposure of the test plant cell to one or a combination of abiotic stress conditions. When used in reference to such a comparison of expression profiles, the
30 term "substantially similar" means that the individual nucleotide sequences in the test plant cell profile are altered in the same manner as the corresponding nucleotide sequences in the expression profile characteristic of the stress response.

By way of example, where exposure to saline results in an increased expression of nucleotide sequences A, B and C, and a decreased expression of nucleotide sequences D and E, as indicated by the expression profile characteristic of a saline stress response, a determination that corresponding nucleotide sequences A, B and C in the test plant cell are increased and that nucleotides sequences D and E are decreased is indicative of exposure of the test plant cell to a saline stress condition. It should be recognized that, where, for example, only nucleotide sequences A, B, D and E are examined in the test plant cell, an increase in A and B and a decrease in D and E expression of the test plant cells is considered to be substantially similar to the expression profile characteristic of a saline stress condition and, therefore, is indicative of exposure of the plant cell to a saline stress condition. Similarly, where the levels of expression of the nucleotide sequences examined in a test plant are altered in the same manner, i.e., are increased or are decreased, as that observed in an expression profile characteristic of a particular stress response, the absolute levels of expression may vary, for example, two-fold, five-fold, ten-fold, or the like. Nevertheless, the expression profile of the test plant cell is considered to be substantially similar to the expression profile characteristic of the particular stress response and, therefore, indicative of exposure of the plant cell to the stress condition.

As disclosed herein, clusters of stress-regulated genes (and their products), some of which also have been described as having cellular functions such as enzymatic activity or roles as transcription factors, are involved in the response of plant cells to various abiotic stresses (see Tables 29-31; see, also, Tables 1 and 32). As such, the polynucleotide sequences comprising the genes in a cluster likely share common stress-regulated regulatory elements, including, for example, cold-regulated regulatory elements (SEQ ID NOS:2704-3955), salinity-regulated regulatory elements (SEQ ID NOS:4910-5107, and osmotic pressure-regulated regulatory elements (SEQ ID NOS:5108-5263), as well as regulatory elements that are responsive to a combination of stress conditions, but not to any of the individual stress conditions, alone (SEQ ID NOS:3956-4909 and 5263-5379). The identification of such clusters of genes thus provides a means to identify the stress-regulated regulatory elements that control the level of expression of these genes.

As used herein, the term "plant stress-regulated gene" means a polynucleotide sequence of a plant, the transcription of which is altered in response to exposure to a stress condition, and the regulatory elements linked to such a polynucleotide sequence and involved in the stress response, which can be induction or repression. In general, plant stress gene regulatory elements are contained within a sequence including approximately two kilobases upstream (5') of the transcription or translation start site and two kilobases downstream (3') of the transcription or translation termination site. In the absence of an abiotic stress condition, the stress-regulated gene can normally be unexpressed in the cells, can be expressed at a basal level, which is induced to a higher level in response to the stress condition, or can be expressed at a level that is reduced (decreased) in response to the stress condition. The coding region of a plant stress-regulated gene encodes a stress-regulated polypeptide, and also can be the basis for expression of a functional RNA molecule such as an antisense molecule or ribozyme. A stress-regulated polypeptide can have an adaptive effect on a plant, thereby allowing the plant to better tolerate stress conditions; or can have a maladaptive effect, thereby decreasing the ability of the plant to tolerate the stress conditions.

The present invention provides an isolated plant stress-regulated regulatory element, which regulates expression of an operatively linked nucleotide sequence in a plant in response a stress condition. As disclosed herein, a plant stress-regulated regulatory element can be isolated from a polynucleotide sequence of a plant stress-regulated gene comprising a nucleotide sequence as set forth in SEQ ID NOS:1-2703, for example any of SEQ ID NOS:2704-5379 (see Table 2). It is recognized that certain of the polynucleotides set forth as SEQ ID NOS:1-5379 previously have been described as being involved in a stress-regulated response in plants, including SEQ ID NOS:156, 229, 233, 558, 573, 606, 625, 635, 787, 813, 1263, 1386, 1391, 1405, 1445, 1484, 1589, 1609, 1634, 1726, 1866, 1918, and 1928 and, therefore, are not encompassed, in whole or in part, within the compositions of the invention, and are encompassed within only certain particular methods of the invention, for example, methods of making a transgenic plant that is resistant to two or more stress conditions, since, even where such a gene was known to be expressed in response to a single stress condition such as cold or saline (e.g., SEQ ID NO:1263), it was not known

prior to the present disclosure that any of these genes was responsive to a combination of stress conditions (for example, a combination of cold and osmotic stress for SEQ ID NOS:1726, 1866, 1918, and 1928; or a combination of cold, osmotic and saline stress for SEQ ID NOS:1263,1386, 1391, 1405, 1445, 1484, 1589, 1609, and 1634).

5 Methods for identifying and isolating the stress-regulated regulatory element from the disclosed polynucleotides, or genomic DNA clones corresponding thereto, are well known in the art. For example, methods of making deletion constructs or linker-scanner constructs can be used to identify nucleotide sequences that are responsive to a stress condition. Generally, such constructs include a reporter gene
10 operatively linked to the sequence to be examined for regulatory activity. By performing such assays, a plant stress-regulated regulatory element can be defined within a sequence of about 500 nucleotides or fewer, generally at least about 200 nucleotides or fewer, particularly about 50 to 100 nucleotides, and more particularly at least about 20 nucleotides or fewer. Preferably the minimal (core)
15 sequence required for regulating a stress response of a plant is identified.

 The nucleotide sequences of the genes of a cluster also can be examined using a homology search engine such as described herein to identify sequences of conserved identity, particularly in the nucleotide sequence upstream of the transcription start site. Since all of the genes in a cluster as disclosed are induced in response to a
20 particular stress condition or a particular combination of stress conditions, some or all of the nucleotide sequences can share conserved stress-regulated regulatory elements. By performing such a homology search, putative stress-regulated regulatory elements can be identified. The ability of such identified sequences to function as a plant stress-regulated regulatory element can be confirmed, for example, by operatively
25 linking the sequence to a reporter gene and assaying the construct for responsiveness to a stress condition.

 As used herein, the term "regulatory element" means a nucleotide sequence that, when operatively linked to a coding region of a gene, effects transcription of the coding region such that a ribonucleic acid (RNA) molecule is transcribed from the
30 coding region. A regulatory element generally can increase or decrease the amount of transcription of a nucleotide sequence, for example, a coding sequence, operatively linked to the element with respect to the level at which the nucleotide sequence would

be transcribed absent the regulatory element. Regulatory elements are well known in the art and include promoters, enhancers, silencers, inactivated silencer intron sequences, 3'-untranslated or 5'-untranslated sequences of transcribed sequence, for example, a poly-A signal sequence, or other protein or RNA stabilizing elements, or
5 other gene expression control elements known to regulate gene expression or the amount of expression of a gene product. A regulatory element can be isolated from a naturally occurring genomic DNA sequence or can be synthetic, for example, a synthetic promoter.

Regulatory elements can be constitutively expressed regulatory element,
10 which maintain gene expression at a relative level of activity (basal level), or can be regulated regulatory elements. Constitutively expressed regulatory elements can be expressed in any cell type, or can be tissue specific, which are expressed only in particular cell types, phase specific, which are expressed only during particular developmental or growth stages of a plant cell, or the like. A regulatory element such
15 as a tissue specific or phase specific regulatory element or an inducible regulatory element useful in constructing a recombinant polynucleotide or in a practicing a method of the invention can be a regulatory element that generally, in nature, is found in a plant genome. However, the regulatory element also can be from an organism other than a plant, including, for example, from a plant virus, an animal virus, or a cell
20 from an animal or other multicellular organism.

A regulatory element useful for practicing method of the present is a promoter element. Useful promoters include, but are not limited to, constitutive, inducible, temporally regulated, developmentally regulated, spatially-regulated, chemically regulated, stress-responsive, tissue-specific, viral and synthetic promoters. Promoter
25 sequences are known to be strong or weak. A strong promoter provides for a high level of gene expression, whereas a weak promoter provides for a very low level of gene expression. An inducible promoter is a promoter that provides for the turning on and off of gene expression in response to an exogenously added agent, or to an environmental or developmental stimulus. A bacterial promoter such as the P_{lac}
30 promoter can be induced to varying levels of gene expression depending on the level of isothiopyl galactoside added to the transformed bacterial cells. An isolated promoter sequence that is a strong promoter for heterologous nucleic acid is

advantageous because it provides for a sufficient level of gene expression to allow for easy detection and selection of transformed cells and provides for a high level of gene expression when desired.

Within a plant promoter region there are several domains that are necessary
5 for full function of the promoter. The first of these domains lies immediately upstream of the structural gene and forms the "core promoter region" containing consensus sequences, normally 70 base pairs immediately upstream of the gene. The core promoter region contains the characteristic CAAT and TATA boxes plus surrounding sequences, and represents a transcription initiation sequence that defines
10 the transcription start point for the structural gene.

The presence of the core promoter region defines a sequence as being a promoter: if the region is absent, the promoter is non-functional. The core promoter region, however, is insufficient to provide full promoter activity. A series of regulatory sequences upstream of the core constitute the remainder of the promoter.
15 These regulatory sequences determine expression level, the spatial and temporal pattern of expression and, for an important subset of promoters, expression under inductive conditions (regulation by external factors such as light, temperature, chemicals, hormones).

To define a minimal promoter region, a DNA segment representing the
20 promoter region is removed from the 5' region of the gene of interest and operably linked to the coding sequence of a marker (reporter) gene by recombinant DNA techniques well known to the art. The reporter gene is operably linked downstream of the promoter, so that transcripts initiating at the promoter proceed through the reporter gene. Reporter genes generally encode proteins which are easily measured, including,
25 but not limited to, chloramphenicol acetyl transferase (CAT), beta-glucuronidase (GUS), green fluorescent protein (GFP), β -galactosidase (β -GAL), and luciferase.

The construct containing the reporter gene under the control of the promoter is then introduced into an appropriate cell type by transfection techniques well known to the art. To assay for the reporter protein, cell lysates are prepared and appropriate
30 assays, which are well known in the art, for the reporter protein are performed. For example, if CAT were the reporter gene of choice, the lysates from cells transfected with constructs containing CAT under the control of a promoter under study are

mixed with isotopically labeled chloramphenicol and acetyl-coenzyme A (acetyl-CoA). The CAT enzyme transfers the acetyl group from acetyl-CoA to the 2-position or 3-position of chloramphenicol. The reaction is monitored by thin layer chromatography, which separates acetylated chloramphenicol from unreacted material. The reaction products are then visualized by autoradiography.

The level of enzyme activity corresponds to the amount of enzyme that was made, which in turn reveals the level of expression from the promoter of interest. This level of expression can be compared to other promoters to determine the relative strength of the promoter under study. In order to be sure that the level of expression is determined by the promoter, rather than by the stability of the mRNA, the level of the reporter mRNA can be measured directly, for example, by northern blot analysis. Once activity is detected, mutational and/or deletional analyses may be employed to determine the minimal region and/or sequences required to initiate transcription. Thus, sequences can be deleted at the 5' end of the promoter region and/or at the 3' end of the promoter region, and nucleotide substitutions introduced. These constructs are then introduced to cells and their activity determined.

The choice of promoter will vary depending on the temporal and spatial requirements for expression, and also depending on the target species. In some cases, expression in multiple tissues is desirable. While in others, tissue-specific, e.g., leaf-specific, seed-specific, petal-specific, anther-specific, or pith-specific, expression is desirable. Although many promoters from dicotyledons have been shown to be operational in monocotyledons and *vice versa*, ideally dicotyledonous promoters are selected for expression in dicotyledons, and monocotyledonous promoters for expression in monocotyledons. There is, however, no restriction to the origin or source of a selected promoter. It is sufficient that the promoters are operational in driving the expression of a desired nucleotide sequence in the particular cell.

A range of naturally-occurring promoters are known to be operative in plants and have been used to drive the expression of heterologous (both foreign and endogenous) genes and nucleotide sequences in plants: for example, the constitutive 35S cauliflower mosaic virus (CaMV) promoter, the ripening-enhanced tomato polygalacturonase promoter (Bird et al., 1988), the E8 promoter (Diekmann and Fischer, 1988) and the fruit specific 2A1 promoter (Pear et al., 1989). Many other

promoters, e.g., U2 and U5 snRNA promoters from maize, the promoter from alcohol dehydrogenase, the Z4 promoter from a gene encoding the Z4 22 kD zein protein, the Z10 promoter from a gene encoding a 10 kD zein protein, a Z27 promoter from a gene encoding a 27 kD zein protein, the A20 promoter from the gene encoding a 19 kD zein protein, inducible promoters, such as the light inducible promoter derived from the pea *rbcs* gene and the actin promoter from rice, e.g., the actin 2 promoter (WO 00/70067); seed specific promoters, such as the phaseolin promoter from beans, may also be used. The nucleotide sequences of the stress-regulated genes of this invention can also be expressed under the regulation of promoters that are chemically regulated. This enables the nucleic acid sequence or encoded polypeptide to be synthesized only when the crop plants are treated with the inducing chemicals. Chemical induction of gene expression is detailed in EP 0 332 104 and U.S. Pat. 5,614,395.

In some instances it may be desirable to link a constitutive promoter to a polynucleotide comprising a stress regulated gene of the invention. Examples of some constitutive promoters include the rice actin 1 (Wang et al., 1992; U.S. Pat. No. 5,641,876), CaMV 35S (Odell et al., 1985), CaMV 19S (Lawton et al., 1987), *nos*, *Adh*, sucrose synthase; and the ubiquitin promoters.

In other situations it may be desirable to limit expression of stress-related sequences to specific tissues or stages of development. As used herein, the term "tissue specific or phase specific regulatory element" means a nucleotide sequence that effects transcription in only one or a few cell types, or only during one or a few stages of the life cycle of a plant, for example, only for a period of time during a particular stage of growth, development or differentiation. The terms "tissue specific" and "phase specific" are used together herein in referring to a regulatory element because a single regulatory element can have characteristics of both types of regulatory elements. For example, a regulatory element active only during a particular stage of plant development also can be expressed only in one or a few types of cells in the plant during the particular stage of development. As such, any attempt to classify such regulatory elements as tissue specific or as phase specific can be difficult. Accordingly, unless indicated otherwise, all regulatory elements having the

characteristic of a tissue specific regulatory element, or a phase specific regulatory element, or both are considered together for purposes of the present invention.

Examples of tissue specific promoters which have been described include the lectin (Vodkin, 1983; Lindstrom et al., 1990) corn alcohol dehydrogenase 1 (Vogel et al., 1989; Dennis et al., 1984), corn light harvesting complex (Simpson, 1986; Bansal et al., 1992), corn heat shock protein (Odell et al., 1985), pea small subunit RuBP carboxylase (Poulsen et al., 1986), Ti plasmid mannopine synthase and Ti plasmid nopaline synthase (Langridge et al., 1989), petunia chalcone isomerase (vanTunen et al., 1988), bean glycine rich protein 1 (Keller et al., 1989), truncated CaMV 35s (Odell et al., 1985), potato patatin (Wenzler et al., 1989), root cell (Yamamoto et al., 1990), maize zein (Reina et al., 1990; Kriz et al., 1987; Wandelt et al., 1989; Langridge et al., 1983; Reina et al., 1990), globulin-1 (Belanger et al., 1991), α -tubulin, cab (Sullivan et al., 1989), PEPCase (Hudspeth & Grula, 1989), R gene complex-associated promoters (Chandler et al., 1989), histone, and chalcone synthase promoters (Franken et al., 1991). Tissue specific enhancers are described by Fromm et al. (1989).

Several other tissue-specific regulated genes and/or promoters have been reported in plants, including genes encoding seed storage proteins such as napin, cruciferin, beta-conglycinin, and phaseolin, zein or oil body proteins such as oleosin, genes involved in fatty acid biosynthesis, including acyl carrier protein, stearyl-ACP desaturase, fatty acid desaturases (fad 2-1), and other genes expressed during embryonic development such as Bce4 (see, for example, EP 255378 and Kridl et al., 1991). Particularly useful for seed-specific expression is the pea viciin promoter (Czako et al., 1992). (See also U.S. Pat. No. 5,625,136, which is incorporated herein by reference.) Other useful promoters for expression in mature leaves are those that are switched on at the onset of senescence, such as the SAG promoter from *Arabidopsis* (Gan et al., 1995).

A class of fruit-specific promoters expressed at or during anththesis through fruit development, at least until the beginning of ripening, is discussed in U.S. Pat. No. 4,943,674. cDNA clones that are preferentially expressed in cotton fiber have been isolated (John et al., 1992). cDNA clones from tomato displaying differential expression during fruit development have been isolated and characterized (Mansson et

al., 1985, Slater et al., 1985). The promoter for polygalacturonase gene is active in fruit ripening. The polygalacturonase gene is described in U.S. Pat. Nos. 4,535,060, 4,769,061, 4,801,590, and 5,107,063, each of which is incorporated herein by reference.

- 5 Other examples of tissue-specific promoters include those that direct expression in leaf cells following damage to the leaf (for example, from chewing insects), in tubers (for example, patatin gene promoter), and in fiber cells (an example of a developmentally-regulated fiber cell protein is E6 (John et al., 1992). The E6 gene is most active in fiber, although low levels of transcripts are found in leaf,
10 ovule and flower.

- Additional tissue specific or phase specific regulatory elements include, for example, the *AGL8/FRUITFULL* regulatory element, which is activated upon floral induction (Hempel et al., Development 124:3845-3853, 1997, which is incorporated herein by reference); root specific regulatory elements such as the regulatory elements
15 from the RCP1 gene and the LRP1 gene (Tsugeki and Fedoroff, Proc. Natl. Acad. USA 96:12941-12946, 1999; Smith and Fedoroff, Plant Cell 7:735-745, 1995, each of which is incorporated herein by reference); flower specific regulatory elements such as the regulatory elements from the *LEAFY* gene and the *APETALA1* gene (Blazquez et al., Development 124:3835-3844, 1997, which is incorporated herein by reference;
20 Hempel et al., *supra*, 1997); seed specific regulatory elements such as the regulatory element from the oleosin gene (Plant et al., Plant Mol. Biol. 25:193-205, 1994, which is incorporated herein by reference), and dehiscence zone specific regulatory element. Additional tissue specific or phase specific regulatory elements include the Zn13 promoter, which is a pollen specific promoter (Hamilton et al., Plant Mol. Biol.
25 18:211-218, 1992, which is incorporated herein by reference); the *UNUSUAL FLORAL ORGANS (UFO)* promoter, which is active in apical shoot meristem; the promoter active in shoot meristems (Atanassova et al., Plant J. 2:291, 1992, which is incorporated herein by reference), the *cdc2a* promoter and *cyc07* promoter (see, for example, Ito et al., Plant Mol. Biol. 24:863, 1994; Martinez et al., Proc. Natl. Acad. Sci., USA 89:7360, 1992; Medford et al., Plant Cell 3:359, 1991; Terada et al., Plant J.
30 3:241, 1993; Wissenbach et al., Plant J. 4:411, 1993, each of which is incorporated herein by reference); the promoter of the *APETALA3* gene, which is active in floral

meristems (Jack et al., *Cell* 76:703, 1994, which is incorporated herein by reference; Hempel et al., *supra*, 1997); a promoter of an agamous-like (AGL) family member, for example, AGL8, which is active in shoot meristem upon the transition to flowering (Hempel et al., *supra*, 1997); floral abscission zone promoters; L1-specific promoters; and the like.

The tissue-specificity of some "tissue-specific" promoters may not be absolute and may be tested by one skilled in the art using the diphtheria toxin sequence. One can also achieve tissue-specific expression with "leaky" expression by a combination of different tissue-specific promoters (Beals et al., 1997). Other tissue-specific promoters can be isolated by one skilled in the art (see U.S. 5,589,379). Several inducible promoters ("gene switches") have been reported, many of which are described in the review by Gatz (1996) and Gatz (1997). These include tetracycline repressor system, *Lac* repressor system, copper inducible systems, salicylate inducible systems (such as the PR1a system), glucocorticoid (Aoyama et al., 1997) and ecdysone inducible systems. Also included are the benzene sulphonamide (U.S. Pat. No. 5,364,780) and alcohol (WO 97/06269 and WO 97/06268) inducible systems and glutathione S-transferase promoters.

In some instances it might be desirable to inhibit expression of a native DNA sequence within a plant's tissues to achieve a desired phenotype. In this case, such inhibition might be accomplished with transformation of the plant to comprise a constitutive, tissue-independent promoter operably linked to an antisense nucleotide sequence, such that constitutive expression of the antisense sequence produces an RNA transcript that interferes with translation of the mRNA of the native DNA sequence.

Inducible regulatory elements also are useful for purposes of the present invention. As used herein, the term "inducible regulatory element" means a regulatory element that, when exposed to an inducing agent, effects an increased level of transcription of a nucleotide sequence to which it is operatively linked as compared to the level of transcription, if any, in the absence of an inducing agent. Inducible regulatory elements can be those that have no basal or constitutive activity and only effect transcription upon exposure to an inducing agent, or those that effect a basal or constitutive level of transcription, which is increased upon exposure to an inducing

agent. Inducible regulatory elements that effect a basal or constitutive level of expression generally are useful in a method or composition of the invention where the induced level of transcription is substantially greater than the basal or constitutive level of expression, for example, at least about two-fold greater, or at least about five-fold greater. Particularly useful inducible regulatory elements do not have a basal or constitutive activity, or increase the level of transcription at least about ten-fold greater than a basal or constitutive level of transcription associated with the regulatory element.

Inducible promoters that have been described include the ABA- and turgor-inducible promoters, the promoter of the auxin-binding protein gene (Schwob et al., 1993), the UDP glucose flavonoid glycosyl-transferase gene promoter (Ralston et al., 1988), the MPI proteinase inhibitor promoter (Cordero et al., 1994), and the glyceraldehyde-3-phosphate dehydrogenase gene promoter (Kohler et al., 1995; Quigley et al., 1989; Martinez et al., 1989).

The term "inducing agent" is used to refer to a chemical, biological or physical agent or environmental condition that effects transcription from an inducible regulatory element. In response to exposure to an inducing agent, transcription from the inducible regulatory element generally is initiated *de novo* or is increased above a basal or constitutive level of expression. Such induction can be identified using the methods disclosed herein, including detecting an increased level of RNA transcribed from a nucleotide sequence operatively linked to the regulatory element, increased expression of a polypeptide encoded by the nucleotide sequence, or a phenotype conferred by expression of the encoded polypeptide.

An inducing agent useful in a method of the invention is selected based on the particular inducible regulatory element. For example, the inducible regulatory element can be a metallothionein regulatory element, a copper inducible regulatory element or a tetracycline inducible regulatory element, the transcription from which can be effected in response to metal ions, copper or tetracycline, respectively (Furst et al., Cell 55:705-717, 1988; Mett et al., Proc. Natl. Acad. Sci., USA 90:4567-4571, 1993; Gatz et al., Plant J. 2:397-404, 1992; Roder et al., Mol. Gen. Genet. 243:32-38, 1994, each of which is incorporated herein by reference). The inducible regulatory element also can be an ecdysone regulatory element or a glucocorticoid regulatory

element, the transcription from which can be effected in response to ecdysone or other steroid (Christopherson et al., Proc. Natl. Acad. Sci., USA 89:6314-6318, 1992; Schena et al., Proc. Natl. Acad. Sci., USA 88:10421-10425, 1991, each of which is incorporated herein by reference). In addition, the regulatory element can be a cold responsive regulatory element or a heat shock regulatory element, the transcription of which can be effected in response to exposure to cold or heat, respectively (Takahashi et al., Plant Physiol. 99:383-390, 1992, which is incorporated herein by reference). Additional regulatory elements useful in the methods or compositions of the invention include, for example, the spinach nitrite reductase gene regulatory element (Back et al., Plant Mol. Biol. 17:9, 1991, which is incorporated herein by reference); a light inducible regulatory element (Feinbaum et al., Mol. Gen. Genet. 226:449, 1991; Lam and Chua, Science 248:471, 1990, each of which is incorporated herein by reference), a plant hormone inducible regulatory element (Yamaguchi-Shinozaki et al., Plant Mol. Biol. 15:905, 1990; Kares et al., Plant Mol. Biol. 15:225, 1990, each of which is incorporated herein by reference), and the like.

An inducible regulatory element also can be a plant stress-regulated regulatory element of the invention. In addition to the known stress conditions that specifically induce or repress expression from such elements, the present invention provides methods of identifying agents that mimic a stress condition. Accordingly, such stress mimics are considered inducing or repressing agents with respect to a plant stress-regulated regulatory element. In addition, a recombinant polypeptide comprising a zinc finger domain, which is specific for the regulatory element, and an effector domain, particularly an activator, can be useful as an inducing agent for a plant stress-regulated regulatory element. Furthermore, such a recombinant polypeptide provides the advantage that the effector domain can be a repressor domain, thereby providing a repressing agent, which decreases expression from the regulatory element. In addition, use of such a method of modulating expression of an endogenous plant stress-regulated gene provides the advantage that the polynucleotide encoding the recombinant polypeptide can be introduced into cells of the plant, thus providing a transgenic plant that can be regulated coordinately with the endogenous plant stress-regulated gene upon exposure to a stress condition. A polynucleotide encoding such a

recombinant polypeptide can be operatively linked to and expressed from a constitutively active, inducible or tissue specific or phase specific regulatory element.

- In one embodiment, the promoter may be a gamma zein promoter, an oleosin ole16 promoter, a globulin I promoter, an actin I promoter, an actin c1 promoter, a
 5 sucrose synthetase promoter, an INOPS promoter, an EXM5 promoter, a globulin2 promoter, a b-32, ADPG-pyrophosphorylase promoter, an LtpI promoter, an Ltp2 promoter, an oleosin ole17 promoter, an oleosin ole18 promoter, an actin 2 promoter, a pollen-specific protein promoter, a pollen-specific pectate lyase promoter, an anther-specific protein promoter (Huffman), an anther-specific gene RTS2 promoter, a
 10 pollen-specific gene promoter, a tapetum-specific gene promoter, tapetum-specific gene RAB24 promoter, a anthranilate synthase alpha subunit promoter, an alpha zein promoter, an anthranilate synthase beta subunit promoter, a dihydrodipicolinate synthase promoter, a Thi 1 promoter, an alcohol dehydrogenase promoter, a cab binding protein promoter, an H3C4 promoter, a RUBISCO SS starch branching
 15 enzyme promoter, an ACCase promoter, an actin3 promoter, an actin7 promoter, a regulatory protein GF14-12 promoter, a ribosomal protein L9 promoter, a cellulose biosynthetic enzyme promoter, an S-adenosyl-L-homocysteine hydrolase promoter, a superoxide dismutase promoter, a C-kinase receptor promoter, a phosphoglycerate mutase promoter, a root-specific RCc3 mRNA promoter, a glucose-6 phosphate
 20 isomerase promoter, a pyrophosphate-fructose 6-phosphatetphosphotransferase promoter, an ubiquitin promoter, a beta-ketoacyl-ACP synthase promoter, a 33 kDa photosystem 11 promoter, an oxygen evolving protein promoter, a 69 kDa vacuolar ATPase subunit promoter, a metallothionein-like protein promoter, a glyceraldehyde-3-phosphate dehydrogenase promoter, an ABA- and ripening- inducible-like protein
 25 promoter, a phenylalanine ammonia lyase promoter, an adenosine triphosphatase S-adenosyl-L-homocysteine hydrolase promoter, an a- tubulin promoter, a eab promoter, a PEPCase promoter, an R gene promoter, a lectin promoter, a light harvesting complex promoter, a heat shock protein promoter, a chalone synthase promoter, a zein promoter, a globulin-1 promoter, an ABA promoter, an auxin-binding protein promoter, a UDP glucose flavonoid glycosyl-transferase gene
 30 promoter, an NTI promoter, an actin promoter, an opaque 2 promoter, a b70 promoter, an oleosin promoter, a CaMV 35S promoter, a CaMV 19S promoter, a histone

promoter, a turgor-inducible promoter, a pea small subunit RuBP carboxylase promoter, a Ti plasmid mannopine synthase promoter, Ti plasmid nopaline synthase promoter, a petunia chalcone isomerase promoter, a bean glycine rich protein I promoter, a CaMV 35S transcript promoter, a potato patatin promoter, or a S-E9 small subunit RuBP carboxylase promoter.

In addition to promoters, a variety of 5N and 3N transcriptional regulatory sequences are also available for use in the present invention. Transcriptional terminators are responsible for the termination of transcription and correct mRNA polyadenylation. The 3'-untranslated regulatory DNA sequence preferably includes from about 50 to about 1,000, more preferably about 100 to about 1,000, nucleotide base pairs and contains plant transcriptional and translational termination sequences. Appropriate transcriptional terminators and those which are known to function in plants include the CaMV 35S terminator, the *tml* terminator, the nopaline synthase terminator, the pea rbeS E9 terminator, the terminator for the T7 transcript from the octopine synthase gene of *Agrobacterium tumefaciens*, and the 3N end of the protease inhibitor I or II genes from potato or tomato, although other 3N elements known to those of skill in the art can also be employed. Alternatively, one also could use a gamma coixin, oleosin 3 or other terminator from the genus *Coix*. Preferred 3' elements include those from the nopaline synthase gene of *Agrobacterium tumefaciens* (Bevan et al., 1983), the terminator for the T7 transcript from the octopine synthase gene of *Agrobacterium tumefaciens*, and the 3' end of the protease inhibitor I or II genes from potato or tomato.

As the DNA sequence between the transcription initiation site and the start of the coding sequence, i.e., the untranslated leader sequence, can influence gene expression, one may also wish to employ a particular leader sequence. Preferred leader sequences are contemplated to include those that include sequences predicted to direct optimum expression of the attached sequence, i.e., to include a preferred consensus leader sequence that may increase or maintain mRNA stability and prevent inappropriate initiation of translation. The choice of such sequences will be known to those of skill in the art in light of the present disclosure. Sequences that are derived from genes that are highly expressed in plants will be most preferred.

Other sequences that have been found to enhance gene expression in transgenic plants include intron sequences (e.g., from *Adh1*, *bronzel*, *actin1*, *actin 2* (WO 00/760067), or the sucrose synthase intron) and viral leader sequences (e.g., from TMV, MCMV and AMV). For example, a number of non-translated leader
5 sequences derived from viruses are known to enhance expression. Specifically, leader sequences from tobacco mosaic virus (TMV), maize chlorotic mottle virus (MCMV), and alfalfa mosaic virus (AMV) have been shown to be effective in enhancing expression (e.g., Gallie et al., 1987; Skuzeski et al., 1990). Other leaders known in the art include but are not limited to picornavirus leaders, for example, EMCV leader
10 (encephalomyocarditis virus 5' non-coding region; Elroy-Stein et al., 1989); potyvirus leaders, for example, TEV leader (tobacco etch virus); MDMV leader (maize dwarf mosaic virus); human immunoglobulin heavy chain binding protein (BiP) leader, (Macejak et al., 1991); untranslated leader from the coat protein mRNA of AMV (AMV RNA 4; Jobling et al., 1987), TMV (Gallie et al., 1989), and MCMV (Lommel
15 et al., 1991; see also, della Cioppa et al., 1987).

Regulatory elements such as *Adh* intron 1 (Callis et al., 1987), sucrose synthase intron (Vasil et al., 1989) or TMV omega element (Gallie, et al., 1989), may further be included where desired. Examples of enhancers include elements from the CaMV 35S promoter, octopine synthase genes (Ellis et al., 1987), the rice actin I
20 gene, the maize alcohol dehydrogenase gene (Callis et al., 1987), the maize shrunken I gene (Vasil et al., 1989), TMV Omega element (Gallie et al., 1989) and promoters from non-plant eukaryotes (e.g. yeast; Ma et al., 1988).

Vectors for use in accordance with the present invention may be constructed to include the ocs enhancer element, which was first identified as a 16 bp palindromic
25 enhancer from the octopine synthase (ocs) gene of *utiliane* (Ellis et al., 1987), and is present in at least 10 other promoters (Bouchez et al., 1989). The use of an enhancer element, such as the ocs element and particularly multiple copies of the element, will act to increase the level of transcription from adjacent promoters when applied in the context of monocot transformation.

30 The methods of the invention provide genetically modified plant cells, which can contain, for example, a coding region, or peptide portion thereof, of a plant stress-regulated gene operatively linked to a heterologous inducible regulatory element; or a

plant stress-regulated regulatory element operatively linked to a heterologous nucleotide sequence encoding a polypeptide of interest. In such a plant, the expression from the inducible regulatory element can be effected by exposing the plant cells to an inducing agent in any of numerous ways depending, for example, on the inducible regulatory element and the inducing agent. For example, where the inducible regulatory element is a cold responsive regulatory element present in the cells of a transgenic plant, the plant can be exposed to cold conditions, which can be produced artificially, for example, by placing the plant in a thermostatically controlled room, or naturally, for example, by planting the plant in an environment characterized, at least in part, by attaining temperatures sufficient to induce transcription from the promoter but not so cold as to kill the plants. By examining the phenotype of such transgenic plants, those plants that ectopically express a gene product that confers increased resistance of the plant to cold can be identified. Similarly, a transgenic plant containing a metallothionein promoter can be exposed to metal ions such as cadmium or copper by watering the plants with a solution containing the inducing metal ions, or can be planted in soil that is contaminated with a level of such metal ions that is toxic to most plants. The phenotype of surviving plants can be observed, those expressing desirable traits can be selected.

As used herein, the term "phenotype" refers to a physically detectable characteristic. A phenotype can be identified visually by inspecting the physical appearance of a plant following exposure, for example, to increased osmotic conditions; can be identified using an assay to detecting a product produced due to expression of reporter gene, for example, an RNA molecule, a polypeptide such as an enzyme, or other detectable signal such as disclosed herein; or by using any appropriate tool useful for identifying a phenotype of a plant, for example, a microscope, a fluorescence activated cell sorter, or the like.

A transgenic plant containing an inducible regulatory element such as a steroid inducible regulatory element can be exposed to a steroid by watering the plants with a solution containing the steroid. The use of an inducible regulatory element that is induced upon exposure to a chemical or biological inducing agent that can be placed in solution or suspension in an aqueous medium can be particularly useful because the inducing agent can be applied conveniently to a relatively large crop of transgenic

plants containing the inducible regulatory element, for example, through a watering system or by spraying the inducing agent over the field. As such, inducible regulatory elements that are responsive to an environmental inducing agent, for example, cold; heat; metal ions or other potentially toxic agents such as pesticides, which can
5 contaminate a soil; or the like; or inducible regulatory elements that are regulated by inducing agents that conveniently can be applied to plants, can be particularly useful in a method or composition of the invention, and allow the identification and selection of plants that express desirable traits and survive and grow in environments that otherwise would not support growth of the plants.

10 As disclosed herein, the present invention provides plant stress-regulated regulatory elements, which are identified based on the expression of clusters of plant genes in response to stress. As used herein, the term "stress-regulated regulatory element of a plant" or "plant stress-regulated regulatory element" means a nucleotide sequence of a plant genome that can respond to a stress such that expression of a gene
15 product encoded by a gene comprising the regulatory element (a stress-inducible gene) is increased above or decreased below the level of expression of the gene product in the absence of the stress condition. The regulatory element can be any gene regulatory element, including, for example, a promoter, an enhancer, a silencer, or the like. In one embodiment, the plant stress-regulated regulatory element is a
20 plant stress-regulated promoter.

For purposes of modulating the responsiveness of a plant to a stress condition, it can be useful to introduce a modified plant stress-regulated regulatory element into a plant. Such a modified regulatory element can have any desirable characteristic, for example, it can be inducible to a greater level than the corresponding wild-type
25 promoter, or it can be inactivated such that, upon exposure to a stress, there is little or no induction of expression of a nucleotide sequence operatively linked to the mutant element. A plant stress-regulated regulatory element can be modified by incorporating random mutations using, for example, *in vitro* recombination or DNA shuffling (Stemmer et al., Nature 370: 389-391, 1994; U.S. Pat. No. 5,605,793, each of which is incorporated herein by reference). Using such a method, millions of
30 mutant copies of the polynucleotide, for example, stress-regulated regulatory element,

can be produced based on the original nucleotide sequence, and variants with improved properties, such as increased inducibility can be recovered.

- A mutation method such as DNA shuffling encompasses forming a mutagenized double-stranded polynucleotide from a template double-stranded polynucleotide, wherein the template double-stranded polynucleotide has been
- 5 cleaved into double stranded random fragments of a desired size, and comprises the steps of adding to the resultant population of double-stranded random fragments one or more single or double stranded oligonucleotides, wherein the oligonucleotides comprise an area of identity and an area of heterology to the double stranded template
- 10 polynucleotide; denaturing the resultant mixture of double stranded random fragments and oligonucleotides into single stranded fragments; incubating the resultant population of single stranded fragments with a polymerase under conditions that result in the annealing of the single stranded fragments at the areas of identity to form pairs of annealed fragments, the areas of identity being sufficient for one member of a
- 15 pair to prime replication of the other, thereby forming a mutagenized double-stranded polynucleotide; and repeating the second and third steps for at least two further cycles, wherein the resultant mixture in the second step of a further cycle includes the mutagenized double-stranded polynucleotide from the third step of the previous cycle, and the further cycle forms a further mutagenized double-stranded polynucleotide.
- 20 Preferably, the concentration of a single species of double stranded random fragment in the population of double stranded random fragments is less than 1% by weight of the total DNA. In addition, the template double stranded polynucleotide can comprise at least about 100 species of polynucleotides. The size of the double stranded random fragments can be from about 5 base pairs to 5 kilobase pairs. In a further
- 25 embodiment, the fourth step of the method comprises repeating the second and the third steps for at least 10 cycles.

- A plant stress-regulated regulatory element of the invention is useful for expressing a nucleotide sequence operatively linked to the element in a cell, particularly a plant cell. As used herein, the term "expression" refers to the
- 30 transcription and/or translation of an endogenous gene or a transgene in plants. In the case of an antisense molecule, for example, the term "expression" refers to the transcription of the polynucleotide encoding the antisense molecule.

As used herein, the term "operatively linked," when used in reference to a plant stress-regulated regulatory element, means that the regulatory element is positioned with respect to a second nucleotide sequence such that the regulatory element effects transcription or translation of the nucleotide sequence in substantially the same manner, but not necessarily to the same extent, as it does when the regulatory element is present in its natural position in a genome. Transcriptional promoters, for example, generally act in a position and orientation dependent manner and usually are positioned at or within about five nucleotides to about fifty nucleotides 5' (upstream) of the start site of transcription of a gene in nature. In comparison, enhancers and silencers can act in a relatively position or orientation independent manner and, therefore, can be positioned several hundred or thousand nucleotides upstream or downstream from a transcription start site, or in an intron within the coding region of a gene, yet still be operatively linked to a coding region so as to effect transcription.

The second nucleotide sequence, i.e., the sequence operatively linked to the plant stress-regulated regulatory element, can be any nucleotide sequence, including, for example, a coding region of a gene or cDNA; a sequence encoding an antisense molecule, an RNAi molecule, ribozyme, triplexing agent (see, for example, Frank-Kamenetskii and Mirkin, Ann. Rev. Biochem. 64:65-95, 1995), or the like; or a sequence that, when transcribed, can be detected in the cell using, for example, by hybridization or amplification, or when translated produces a detectable signal. The term "coding region" is used broadly herein to include a nucleotide sequence of a genomic DNA or a cDNA molecule comprising all or part of a coding region of the coding strand. A coding region can be transcribed from an operatively linked regulatory element, and can be translated into a full length polypeptide or a peptide portion of a polypeptide. It should be recognized that, in a nucleotide sequence comprising a coding region, not all of the nucleotides in the sequence need necessarily encode the polypeptide and, particularly, that a gene transcript can contain one or more introns, which do not encode an amino acid sequence of a polypeptide but, nevertheless, are part of the coding region, particularly the coding strand, of the gene.

The present invention also relates to a recombinant polynucleotide, which contains a polynucleotide portion of a plant stress-regulated gene operatively linked to

a heterologous nucleotide sequence. As used herein, the term "polynucleotide portion of plant stress-regulated sequence" means a contiguous nucleotide sequence of the plant stress-regulated gene that provides a function. The portion can be any portion of the sequence, particularly a coding sequence, or a sequence encoding a peptide
5 portion of the stress-regulated polypeptide; the stress-regulated regulatory element; a sequence useful as an antisense molecule or triplexing agent; or a sequence useful for disrupting (knocking-out) an endogenous plant stress-regulated gene.

A heterologous nucleotide sequence is a nucleotide sequence that is not normally part of the plant stress-regulated gene from which the polynucleotide portion
10 of the plant stress-regulated gene-component of the recombinant polynucleotide is obtained; or, if it is a part of the plant stress-regulated gene from which the polynucleotide portion is obtained, it is an orientation other than it would normally be in, for example, is an antisense sequence, or comprises at least partially discontinuous as compared to the genomic structure, for example, a single exon operatively linked to
15 the regulatory element. In general, where the polynucleotide portion of the plant stress-regulated gene comprises the coding sequence in a recombinant polynucleotide of the invention, the heterologous nucleotide sequence will function as a regulatory element. The regulatory element can be any heterologous regulatory element, including, for example, a constitutively active regulatory element, an inducible
20 regulatory element, or a tissue specific or phase specific regulatory element, as disclosed above. Conversely, where the polynucleotide portion of the plant stress-regulated polynucleotide comprises the stress-regulated regulatory element of a recombinant polynucleotide of the invention, the heterologous nucleotide sequence generally will be a nucleotide sequence that can be transcribed and, if desired,
25 translated. Where the heterologous nucleotide sequence is expressed from a plant stress-regulated regulatory element, it generally confers a desirable phenotype to a plant cell containing the recombinant polynucleotide, or provides a means to identify a plant cell containing the recombinant polynucleotide. It should be recognized that a "desirable" phenotype can be one that decreases the ability of a plant cell to compete
30 where the plant cell, or a plant containing the cell, is an undesired plant cell. Thus, a heterologous nucleotide sequence can allow a plant to grow, for example, under conditions in which it would not normally be able to grow.

- A heterologous nucleotide sequence can be, or encode, a selectable marker. As used herein, the term "selectable marker" is used herein to refer to a molecule that, when present or expressed in a plant cell, provides a means to identify a plant cell containing the marker. As such, a selectable marker can provide a means for
- 5 screening a population of plants, or plant cells, to identify those having the marker. A selectable marker also can confer a selective advantage to the plant cell, or a plant containing the cell. The selective advantage can be, for example, the ability to grow in the presence of a negative selective agent such as an antibiotic or herbicide, compared to the growth of plant cells that do not contain the selectable marker. The
- 10 selective advantage also can be due, for example, to an enhanced or novel capacity to utilize an added compound as a nutrient, growth factor or energy source. A selectable advantage can be conferred, for example, by a single polynucleotide, or its expression product, or to a combination of polynucleotides whose expression in a plant cell gives the cell with a positive selective advantage, a negative selective advantage, or both.
- 15 Examples of selectable markers include those that confer antimetabolite resistance, for example, dihydrofolate reductase, which confers resistance to methotrexate (Reiss, Plant Physiol. (Life Sci. Adv.) 13:143-149, 1994); neomycin phosphotransferase, which confers resistance to the aminoglycosides neomycin, kanamycin and paromycin (Herrera-Estrella, EMBO J. 2:987-995, 1983) and hygro,
- 20 which confers resistance to hygromycin (Marsh, Gene 32:481-485, 1984), trpB, which allows cells to utilize indole in place of tryptophan; hisD, which allows cells to utilize histinol in place of histidine (Hartman, Proc. Natl. Acad. Sci., USA 85:8047, 1988); mannose-6-phosphate isomerase which allows cells to utilize mannose (WO 94/20627); ornithine decarboxylase, which confers resistance to the ornithine
- 25 decarboxylase inhibitor, 2-(difluoromethyl)-DL-ornithine (DFMO; McConlogue, 1987, In: Current Communications in Molecular Biology, Cold Spring Harbor Laboratory ed.); and deaminase from *Aspergillus terreus*, which confers resistance to Blasticidin S (Tamura, Biosci. Biotechnol. Biochem. 59:2336-2338, 1995).
- Additional selectable markers include those that confer herbicide resistance, for
- 30 example, phosphinothricin acetyltransferase gene, which confers resistance to phosphinothricin (White et al., Nucl. Acids Res. 18:1062, 1990; Spencer et al., Theor. Appl. Genet. 79:625-631, 1990), a mutant EPSPV-synthase, which confers glyphosate

resistance (Hinchee et al., Bio/Technology 91:915-922, 1998), a mutant acetolactate synthase, which confers imidazolione or sulfonylurea resistance (Lee et al., EMBO J. 7:1241-1248, 1988), a mutant psbA, which confers resistance to atrazine (Smeda et al., Plant Physiol. 103:911-917, 1993), or a mutant protoporphyrinogen oxidase (see 5 U.S. Pat. No. 5,767,373), or other markers conferring resistance to an herbicide such as glufosinate. In addition, markers that facilitate identification of a plant cell containing the polynucleotide encoding the marker include, for example, luciferase (Giacomin, Plant Sci. 116:59-72, 1996; Scikantha, J. Bacteriol. 178:121, 1996), green fluorescent protein (Gerdes, FEBS Lett. 389:44-47, 1996) or fl-glucuronidase 10 (Jefferson, EMBO J. 6:3901-3907, 1997), and numerous others as disclosed herein or otherwise known in the art. Such markers also can be used as reporter molecules.

A heterologous nucleotide sequence can encode an antisense molecule, particularly an antisense molecule specific for a nucleotide sequence of a plant stress-regulated gene, for example, the gene from which the regulatory component of the 15 recombinant polynucleotide is derived. Such a recombinant polynucleotide can be useful for reducing the expression of a plant stress-regulated polypeptide in response to a stress condition because the antisense molecule, like the polypeptide, only will be induced upon exposure to the stress. A heterologous nucleotide sequence also can be, or can encode, a ribozyme or a triplexing agent. In addition to being useful as 20 heterologous nucleotide sequences, such molecules also can be used directly in a method of the invention, for example, to modulate the responsiveness of a plant cell to a stress condition. Thus, an antisense molecule, ribozyme, or triplexing agent can be contacted directly with a target cell and, upon uptake by the cell, can effect their antisense, ribozyme or triplexing activity; or can be encoded by a heterologous 25 nucleotide sequence that is expressed in a plant cell from a plant stress-regulated regulatory element, whereupon it can effect its activity.

An antisense polynucleotide, ribozyme or triplexing agent is complementary to a target sequence, which can be a DNA or RNA sequence, for example, messenger RNA, and can be a coding sequence, a nucleotide sequence comprising an intron-exon 30 junction, a regulatory sequence such as a Shine-Delgarno-like sequence, or the like. The degree of complementarity is such that the polynucleotide, for example, an antisense polynucleotide, can interact specifically with the target sequence in a cell.

Depending on the total length of the antisense or other polynucleotide, one or a few mismatches with respect to the target sequence can be tolerated without losing the specificity of the polynucleotide for its target sequence. Thus, few if any mismatches would be tolerated in an antisense molecule consisting, for example, of twenty
5 nucleotides, whereas several mismatches will not affect the hybridization efficiency of an antisense molecule that is complementary, for example, to the full length of a target mRNA encoding a cellular polypeptide. The number of mismatches that can be tolerated can be estimated, for example, using well known formulas for determining hybridization kinetics (see Sambrook et al., "Molecular Cloning: A Laboratory
10 Manual" 2nd Edition (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; 1989)) or can be determined empirically using methods as disclosed herein or otherwise known in the art, particularly by determining that the presence of the antisense polynucleotide, ribozyme, or triplexing agent in a cell decreases the level of the target sequence or the expression of a polypeptide encoded by the target sequence
15 in the cell.

A nucleotide sequence useful as an antisense molecule, a ribozyme or a triplexing agent can inhibit translation or cleave a polynucleotide encoded by plant stress-regulated gene, thereby modulating the responsiveness of a plant cell to a stress condition. An antisense molecule, for example, can bind to an mRNA to form a
20 double stranded molecule that cannot be translated in a cell. Antisense oligonucleotides of at least about 15 to 25 nucleotides are preferred since they are easily synthesized and can hybridize specifically with a target sequence, although longer antisense molecules can be expressed from a recombinant polynucleotide introduced into the target cell. Specific nucleotide sequences useful as antisense
25 molecules can be identified using well known methods, for example, gene walking methods (see, for example, Seimiya et al., J. Biol. Chem. 272:4631-4636 (1997), which is incorporated herein by reference). Where the antisense molecule is contacted directly with a target cell, it can be operatively associated with a chemically reactive group such as iron-linked EDTA, which cleaves a target RNA at the site of
30 hybridization. A triplexing agent, in comparison, can stall transcription (Maher et al., Antisense Res. Devel. 1:227 (1991); Helene, Anticancer Drug Design 6:569 (1991)).

A plant stress-regulated regulatory element can be included in an expression cassette. As used herein, the term "expression cassette" refers to a nucleotide sequence that can direct expression of an operatively linked polynucleotide. Thus, a plant stress-regulated regulatory element can constitute an expression cassette, or component thereof. An expression cassette is particularly useful for directing expression of a nucleotide sequence, which can be an endogenous nucleotide sequence or a heterologous nucleotide sequence, in a cell, particularly a plant cell. If desired, an expression cassette also can contain additional regulatory elements, for example, nucleotide sequences required for proper translation of a polynucleotide sequence into a polypeptide. In general, an expression cassette can be introduced into a plant cell such that the plant cell, a plant resulting from the plant cell, seeds obtained from such a plant, or plants produced from such seeds are resistant to a stress condition.

Additional regulatory sequences as disclosed above or other desirable sequences such as selectable markers or the like can be incorporated into an expression cassette containing a plant stress-regulated regulatory element (see, for example, WO 99/47552). Examples of suitable markers include dihydrofolate reductase (DHFR) or neomycin resistance for eukaryotic cells and tetracycline or ampicillin resistance for *E. coli*. Selection markers in plants include bleomycin, gentamycin, glyphosate, hygromycin, kanamycin, methotrexate, phleomycin, phosphinotricin, spectinomycin, streptomycin, sulfonamide and sulfonylureas resistance (see, for example, Maliga et al., *Methods in Plant Molecular Biology*, Cold Spring Harbor Laboratory Press, 1995, page 39). The selection marker can have its own promoter or its expression can be driven by the promoter operably linked to the sequence of interest. Additional sequences such as intron sequences (e.g. from *Adh1* or *bronzel*) or viral leader sequences (e.g. from TMV, MCMV and AIVIV), all of which can enhance expression, can be included in the cassette. In addition, where it is desirable to target expression of a nucleotide sequence operatively linked to the stress-regulated regulatory element, a sequence encoding a cellular localization motif can be included in the cassette, for example, such that an encoded transcript or translation product is translocated to and localizes in the cytosol, nucleus, a chloroplast, or another subcellular organelle. Examples of useful transit peptides and transit peptide

sequences can be found in Von Heijne et al., Plant Mol. Biol. Rep. 9: 104, 1991; Clark et al., J. Biol. Chem. 264:17544, 1989; della Cioppa et al., Plant Physiol. 84:965, 1987; Romer et al., Biochem. Biophys. Res. Comm. 196:1414, 1993; Shah et al., Science 233:478, 1986; Archer et al., J. Bioenerg Biomemb. 22:789, 1990; Scandalios, Prog. Clin. Biol. Res. 344:515, 1990; Weisbeek et al., J. Cell Sci. Suppl. 11:199, 1989; Bruce, Trends Cell Biol. 10:440, 2000. The present invention can utilize native or heterologous transit peptides. The encoding sequence for a transit peptide can include all or a portion of the encoding sequence for a particular transit peptide, and may also contain portions of the mature protein encoding sequence associated with a particular transit peptide.

A polynucleotide portion of a plant stress-regulated plant gene, or an expression cassette, can be introduced into a cell as a naked DNA molecule, can be incorporated in a matrix such as a liposome or a particle such as a viral particle, or can be incorporated into a vector. Such vectors can be cloning or expression vectors, but other uses are within the scope of the present invention. A cloning vector is a self-replicating DNA molecule that serves to transfer a DNA segment into a host cell. The three most common types of cloning vectors are bacterial plasmids, phages, and other viruses. An expression vector is a cloning vector designed so that a coding sequence inserted at a particular site will be transcribed and translated into a protein. Incorporation of the polynucleotide into a vector can facilitate manipulation of the polynucleotide, or introduction of the polynucleotide into a plant cell. A vector can be derived from a plasmid or a viral vector such as a T-DNA vector (Horsch et al., Science 227:1229-1231, 1985, which is incorporated herein by reference). If desired, the vector can comprise components of a plant transposable element, for example, a Ds transposon (Bancroft and Dean, Genetics 134:1221-1229, 1993, which is incorporated herein by reference) or an Spm transposon (Aarts et al., Mol. Gen. Genet. 247:555-564, 1995, which is incorporated herein by reference).

In addition to containing the polynucleotide portion of a plant stress-regulated gene, a vector can contain various nucleotide sequences that facilitate, for example, rescue of the vector from a transformed plant cell; passage of the vector in a host cell, which can be a plant, animal, bacterial, or insect host cell; or expression of an encoding nucleotide sequence in the vector, including all or a portion of a rescued

coding region. As such, the vector can contain any of a number of additional transcription and translation elements, including constitutive and inducible promoters, enhancers, and the like (see, for example, Bitter et al., Meth. Enzymol. 153:516-544, 1987). For example, a vector can contain elements useful for passage, growth or
5 expression in a bacterial system, including a bacterial origin of replication; a promoter, which can be an inducible promoter; and the like. In comparison, a vector that can be passaged in a mammalian host cell system can have a promoter such as a metallothionein promoter, which has characteristics of both a constitutive promoter and an inducible promoter, or a viral promoter such as a retrovirus long terminal
10 repeat, an adenovirus late promoter, or the like. A vector also can contain one or more restriction endonuclease recognition and cleavage sites, including, for example, a polylinker sequence, to facilitate rescue of a nucleotide sequence operably linked to the polynucleotide portion.

The present invention also relates to a method of using a polynucleotide
15 portion of a plant stress-regulated gene to confer a selective advantage on a plant cell. Such a method can be performed by introducing, for example, a plant stress-regulated regulatory element into a plant cell, wherein, upon exposure of the plant cell to a stress condition to which the regulatory element is responsive, a nucleotide sequence
20 operatively linked to the regulatory element is expressed, thereby conferring a selective advantage to plant cell. The operatively linked nucleotide sequence can be a heterologous nucleotide sequence, which can be operatively linked to the regulatory element prior to introduction of the regulatory sequence into the plant cell; or can be an endogenous nucleotide sequence into which the regulatory element was targeted by a method such as homologous recombination. The selective advantage conferred by
25 the operatively linked nucleotide sequence can be such that the plant is better able to tolerate the stress condition; or can be any other selective advantage.

As used herein, the term "selective advantage" refers to the ability of a particular organism to better propagate, develop, grow, survive, or otherwise tolerate a condition as compared to a corresponding reference organism that does not contain
30 a plant-stress regulated polynucleotide portion of the present invention. In one embodiment, a selective advantage is exemplified by the ability of a desired plant, plant cell, or the like, that contains an introduced plant stress-regulated regulatory

element, to grow better than an undesired plant, plant cell, or the like, that does not contain the introduced regulatory element. For example, a recombinant polynucleotide comprising a plant stress-regulated regulatory element operatively linked to a heterologous nucleotide sequence encoding an enzyme that inactivates an herbicide can be introduced in a desired plant. Upon exposure of a mixed population of plants comprising the desired plants, which contain the recombinant polynucleotide, and one or more other populations of undesired plants, which lack the recombinant polynucleotide, to a stress condition that induces expression of the regulatory element and to the herbicide, the desired plants will have a greater likelihood of surviving exposure to the toxin and, therefore, a selective advantage over the undesired plants.

In another embodiment, a selective advantage is exemplified by the ability of a desired plant, plant cell, or the like, to better propagate, develop, grow, survive, or otherwise tolerate a condition as compared to an undesired plant, plant cell, or the like, that contains an introduced plant stress-regulated regulatory element. For example, a recombinant polynucleotide comprising a plant stress-regulated regulatory element operatively linked to a plant cell toxin can be introduced into cells of an undesirable plant present in a mixed population of desired and undesired plants, for example, food crops and weeds, respectively, then the plants can be exposed to stress conditions that induce expression from the plant stress-regulated regulatory element, whereby expression of the plant cell toxin results in inhibition of growth or death of the undesired plants, thereby providing a selective advantage to the desired plants, which no longer have to compete with the undesired plants for nutrients, light, or the like. In another example, a plant stress-regulated regulatory element operatively linked to a plant cell toxin can be introduced into cells of plants used as a nurse crop. Nurse crops, also called cover or companion crops, are planted in combination with plants of interest to provide, among other things, shade and soil stability during establishment of the desired plants. Once the desired plants have become established, the presence of the nurse crop may no longer be desirable. Exposure to conditions inducing expression of the gene linked to the plant stress-regulated regulatory element allows elimination of the nurse crop. Alternatively nurse crops can be made less tolerate to abiotic stress by the inhibition of any of the stress-regulated sequences

disclosed herein. Inhibition can be accomplished by any of the method described herein. Upon exposure of the nurse crop to the stress, the decreased ability of the nurse crop to respond to the stress will result in elimination of the nurse crop, leaving only the desired plants.

5 The invention also provides a means of producing a transgenic plant, which comprises plant cells that exhibit altered responsiveness to a stress condition. As such, the present invention further provides a transgenic plant, or plant cells or tissues derived therefrom, which are genetically modified to respond to stress differently than a corresponding wild-type plant or plant not containing constructs of the present
10 invention would respond. As used herein, the term "responsiveness to a stress condition" refers to the ability of a plant to express a plant stress-regulated gene upon exposure to the stress condition. A transgenic plant cell contains a polypeptide portion of a plant stress-regulated gene, or a mutant form thereof, for example, a knock-out mutant. A knock-out mutant form of a plant stress-regulated gene can
15 contain, for example, a mutation such that a STOP codon is introduced into the reading frame of the translated portion of the gene such that expression of a functional stress-regulated polypeptide is prevented; or a mutation in the stress-regulated regulatory element such that inducibility of the element in response to a stress condition is inhibited. Such transgenic plants of the invention can display any of
20 various idiotypic modifications in response to an abiotic stress, including altered tolerance to the stress condition, as well as increased or decreased plant growth, root growth, yield, or the like, as compared to the corresponding wild-type plant.

 The term "plant" is used broadly herein to include any plant at any stage of development, or to part of a plant, including a plant cutting, a plant cell, a plant cell
25 culture, a plant organ, a plant seed, and a plantlet. A plant cell is the structural and physiological unit of the plant, comprising a protoplast and a cell wall. A plant cell can be in the form of an isolated single cell or a cultured cell, or can be part of higher organized unit, for example, a plant tissue, plant organ, or plant. Thus, a plant cell can be a protoplast, a gamete producing cell, or a cell or collection of cells that can
30 regenerate into a whole plant. As such, a seed, which comprises multiple plant cells and is capable of regenerating into a whole plant, is considered plant cell for purposes of this disclosure. A plant tissue or plant organ can be a seed, protoplast, callus, or

any other groups of plant cells that is organized into a structural or functional unit. Particularly useful parts of a plant include harvestable parts and parts useful for propagation of progeny plants. A harvestable part of a plant can be any useful part of a plant, for example, flowers, pollen, seedlings, tubers, leaves, stems, fruit, seeds, roots, and the like. A part of a plant useful for propagation includes, for example, seeds, fruits, cuttings, seedlings, tubers, rootstocks, and the like.

A transgenic plant can be regenerated from a transformed plant cell. As used herein, the term "regenerate" means growing a whole plant from a plant cell; a group of plant cells; a protoplast; a seed; or a piece of a plant such as a callus or tissue. Regeneration from protoplasts varies from species to species of plants. For example, a suspension of protoplasts can be made and, in certain species, embryo formation can be induced from the protoplast suspension, to the stage of ripening and germination. The culture media generally contains various components necessary for growth and regeneration, including, for example, hormones such as auxins and cytokinins; and amino acids such as glutamic acid and proline, depending on the particular plant species. Efficient regeneration will depend, in part, on the medium, the genotype, and the history of the culture. If these variables are controlled, however, regeneration is reproducible.

Regeneration can occur from plant callus, explants, organs or plant parts. Transformation can be performed in the context of organ or plant part regeneration. (see Meth. Enzymol. Vol. 118; Klee et al. Ann. Rev. Plant Physiol. 38:467, 1987, which is incorporated herein by reference). Utilizing the leaf disk-transformation-regeneration method, for example, disks are cultured on selective media, followed by shoot formation in about two to four weeks (see Horsch et al., *supra*, 1985). Shoots that develop are excised from calli and transplanted to appropriate root-inducing selective medium. Rooted plantlets are transplanted to soil as soon as possible after roots appear. The plantlets can be repotted as required, until reaching maturity.

In vegetatively propagated crops, the mature transgenic plants are propagated utilizing cuttings or tissue culture techniques to produce multiple identical plants. Selection of desirable transgenotes is made and new varieties are obtained and propagated vegetatively for commercial use. In seed propagated crops, the mature transgenic plants can be self crossed to produce a homozygous inbred plant. The

resulting inbred plant produces seeds that contain the introduced plant stress-induced regulatory element, and can be grown to produce plants that express a polynucleotide or polypeptide in response to a stress condition that induces expression from the regulatory element. As such, the invention further provides seeds produced by a
5 transgenic plant obtained by a method of the invention.

In addition, transgenic plants comprising different recombinant sequences can be crossbred, thereby providing a means to obtain transgenic plants containing two or more different transgenes, each of which contributes a desirable characteristic to the plant. Methods for breeding plants and selecting for crossbred plants having desirable
10 characteristics or other characteristics of interest are well known in the art.

A method of the invention can be performed by introducing a polynucleotide portion of a plant stress-regulated gene into the plant. As used herein, the term "introducing" means transferring a polynucleotide into a plant cell. A polynucleotide can be introduced into a cell by a variety of methods well known to those of ordinary
15 skill in the art. For example, the polynucleotide can be introduced into a plant cell using a direct gene transfer method such as electroporation or microprojectile mediated transformation, or using *Agrobacterium* mediated transformation. Non-limiting examples of methods for the introduction of polynucleotides into plants are provided in greater detail herein. As used herein, the term "transformed" refers to a
20 plant cell containing an exogenously introduced polynucleotide portion of a plant stress-regulated gene that is or can be rendered active in a plant cell, or to a plant comprising a plant cell containing such a polynucleotide.

It should be recognized that one or more polynucleotides, which are the same or different can be introduced into a plant, thereby providing a means to obtain a
25 genetically modified plant containing multiple copies of a single transgenic sequence, or containing two or more different transgenic sequences, either or both of which can be present in multiple copies. Such transgenic plants can be produced, for example, by simply selecting plants having multiple copies of a single type of transgenic sequence; by cotransfecting plant cells with two or more populations of different
30 transgenic sequences and identifying those containing the two or more different transgenic sequences; or by crossbreeding transgenic plants, each of which contains

one or more desired transgenic sequences, and identifying those progeny having the desired sequences.

Methods for introducing a polynucleotide into a plant cell to obtain a transformed plant also include direct gene transfer (see European Patent A 164 575),
5 injection, electroporation, biolistic methods such as particle bombardment, pollen-mediated transformation, plant RNA virus-mediated transformation, liposome-mediated transformation, transformation using wounded or enzyme-degraded immature embryos, or wounded or enzyme-degraded embryogenic callus, and the like. Transformation methods using *Agrobacterium tumefaciens* tumor inducing (Ti)
10 plasmids or root-inducing (Ri) plasmids, or plant virus vectors are well known in the art (see, for example, WO 99/47552; Weissbach & Weissbach, "Methods for Plant Molecular Biology" (Academic Press, NY 1988), section VIII, pages 421-463; Grierson and Corey, "Plant Molecular Biology" 2d Ed. (Blackie, London 1988), Chapters 7-9, each of which is incorporated herein by reference; Horsch et al., *supra*,
15 1985). The wild-type form of *Agrobacterium*, for example, contains a Ti plasmid, which directs production of tumorigenic crown gall growth on host plants. Transfer of the tumor inducing T-DNA region of the Ti plasmid to a plant genome requires the Ti plasmid-encoded virulence genes as well as T-DNA borders, which are a set of direct DNA repeats that delineate the region to be transferred. An *Agrobacterium*
20 based vector is a modified form of a Ti plasmid, in which the tumor inducing functions are replaced by a nucleotide sequence of interest that is to be introduced into the plant host.

Methods of using *Agrobacterium* mediated transformation include cocultivation of *Agrobacterium* with cultured isolated protoplasts; transformation of
25 plant cells or tissues with *Agrobacterium*; and transformation of seeds, apices or meristems with *Agrobacterium*. In addition, *in planta* transformation by *Agrobacterium* can be performed using vacuum infiltration of a suspension of *Agrobacterium* cells (Bechtold et al., C.R. Acad. Sci. Paris 316:1194, 1993, which is incorporated herein by reference).

30 *Agrobacterium* mediated transformation can employ cointegrate vectors or binary vector systems, in which the components of the Ti plasmid are divided between a helper vector, which resides permanently in the *Agrobacterium* host and carries the

virulence genes, and a shuttle vector, which contains the gene of interest bounded by T-DNA sequences. Binary vectors are well known in the art (see, for example, De Framond, BioTechnology 1:262, 1983; Hoekema et al., Nature 303:179, 1983, each of which is incorporated herein by reference) and are commercially available
5 (Clontech; Palo Alto CA). For transformation, *Agrobacterium* can be cocultured, for example, with plant cells or wounded tissue such as leaf tissue, root explants, hypocotyledons, stem pieces or tubers (see, for example, Glick and Thompson, "Methods in Plant Molecular Biology and Biotechnology" (Boca Raton FL, CRC Press 1993), which is incorporated herein by reference). Wounded cells within the
10 plant tissue that have been infected by *Agrobacterium* can develop organs *de novo* when cultured under the appropriate conditions; the resulting transgenic shoots eventually give rise to transgenic plants, which contain an exogenous polynucleotide portion of a plant stress-regulated gene.

Agrobacterium mediated transformation has been used to produce a variety of
15 transgenic plants, including, for example, transgenic cruciferous plants such as *Arabidopsis*, mustard, rapeseed and flax; transgenic leguminous plants such as alfalfa, pea, soybean, trefoil and white clover; and transgenic solanaceous plants such as eggplant, petunia, potato, tobacco and tomato (see, for example, Wang et al., "Transformation of Plants and Soil Microorganisms" (Cambridge, University Press
20 1995), which is incorporated herein by reference). In addition, *Agrobacterium* mediated transformation can be used to introduce an exogenous polynucleotide sequence, for example, a plant stress-regulated regulatory element into apple, aspen, belladonna, black currant, carrot, celery, cotton, cucumber, grape, horseradish, lettuce, morning glory, muskmelon, neem, poplar, strawberry, sugar beet, sunflower, walnut,
25 asparagus, rice and other plants (see, for example, Glick and Thompson, *supra*, 1993; Hiei et al., Plant J. 6:271-282, 1994; Shimamoto, Science 270:1772-1773, 1995).

Suitable strains of *Agrobacterium tumefaciens* and vectors as well as transformation of *Agrobacteria* and appropriate growth and selection media are well known in the art (GV3101, pMK90RK), Konec, Mol. Gen. Genet. 204:383-396, 1986; (C58C1, pGV3850kan), Deblaere, Nucl. Acid Res. 13:4777, 1985; Bevan, Nucl. Acid Res. 12:8711, 1984; Konec, Proc. Natl. Acad. Sci. USA 86:8467-8471, 1986; Konec, Plant Mol. Biol. 20:963-976, 1992; Konec, Specialized vectors for gene tagging and

- expression studies. In: Plant Molecular Biology Manual Vol. 2, Gelvin and Schilperoort (Eds.), Dordrecht, The Netherlands: Kluwer Academic Publ. (1994), 1-22; European Patent A-1 20 516; Hoekema: The Binary Plant Vector System, Offsetdrukkerij Kanter B. V., Alblasserdam (1985), Chapter V; Fraley, Crit. Rev. Plant. Sci., 4:1-46; An, EMBO J. 4:277-287, 1985).

- Where a polynucleotide portion of a plant stress-regulated gene is contained in vector, the vector can contain functional elements, for example "left border" and "right border" sequences of the T-DNA of *Agrobacterium*, which allow for stable integration into a plant genome. Furthermore, methods and vectors that permit the generation of marker-free transgenic plants, for example, where a selectable marker gene is lost at a certain stage of plant development or plant breeding, are known, and include, for example, methods of co-transformation (Lyznik, Plant Mol. Biol. 13:151-161, 1989; Peng, Plant Mol. Biol. 27:91-104, 1995), or methods that utilize enzymes capable of promoting homologous recombination in plants (see, e.g., W097/08331; Bayley, Plant Mol. Biol. 18:353-361, 1992; Lloyd, Mol. Gen. Genet. 242:653-657, 1994; Maeser, Mol. Gen. Genet. 230:170-176, 1991; Onouchi, Nucl. Acids Res. 19:6373-6378, 1991; see, also, Sambrook et al., *supra*, 1989).

- A direct gene transfer method such as electroporation also can be used to introduce a polynucleotide portion of a plant stress-regulated gene into a cell such as a plant cell. For example, plant protoplasts can be electroporated in the presence of the regulatory element, which can be in a vector (Fromm et al., Proc. Natl. Acad. Sci. USA 82:5824, 1985, which is incorporated herein by reference). Electrical impulses of high field strength reversibly permeabilize membranes allowing the introduction of the nucleic acid. Electroporated plant protoplasts reform the cell wall, divide and form a plant callus. Microinjection can be performed as described in Potrykus and Spangenberg (eds.), *Gene Transfer To Plants* (Springer Verlag, Berlin, NY 1995). A transformed plant cell containing the introduced polynucleotide can be identified by detecting a phenotype due to the introduced polynucleotide, for example, increased or decreased tolerance to a stress condition.

- Microprojectile mediated transformation also can be used to introduce a polynucleotide into a plant cell (Klein et al., Nature 327:70-73, 1987, which is incorporated herein by reference). This method utilizes microprojectiles such as gold

or tungsten, which are coated with the desired nucleic acid molecule by precipitation with calcium chloride, spermidine or polyethylene glycol. The microprojectile particles are accelerated at high speed into a plant tissue using a device such as the BOLIOLISTIC PD-1000 (BioRad; Hercules CA).

- 5 Microprojectile mediated delivery ("particle bombardment") is especially useful to transform plant cells that are difficult to transform or regenerate using other methods. Methods for the transformation using biolistic methods are well known (Wan, Plant Physiol. 104:37-48, 1984; Vasil, Bio/Technology 11:1553-1558, 1993; Christou, Trends in Plant Science 1:423-431, 1996). Microprojectile mediated
- 10 transformation has been used, for example, to generate a variety of transgenic plant species, including cotton, tobacco, corn, hybrid poplar and papaya (see Glick and Thompson, *supra*, 1993). Important cereal crops such as wheat, oat, barley, sorghum and rice also have been transformed using microprojectile mediated delivery (Duan et al., Nature Biotech. 14:494-498, 1996; Shimamoto, Curr. Opin. Biotech. 5:158-162,
- 15 1994). A rapid transformation regeneration system for the production of transgenic plants such as a system that produces transgenic wheat in two to three months (see European Patent No. EP 0709462A2, which is incorporated herein by reference) also can be useful for producing a transgenic plant using a method of the invention, thus allowing more rapid identification of gene functions. The transformation of most
- 20 dicotyledonous plants is possible with the methods described above. Transformation of monocotyledonous plants also can be transformed using, for example, biolistic methods as described above, protoplast transformation, electroporation of partially permeabilized cells, introduction of DNA using glass fibers, *Agrobacterium* mediated transformation, and the like.
- 25 Plastid transformation also can be used to introduce a polynucleotide portion of a plant stress-regulated gene into a plant cell (U.S. Patent Nos. 5,451,513, 5,545,817, and 5,545,818; WO 95/16783; McBride et al., Proc. Natl. Acad. Sci., USA 91:7301-7305, 1994). Chloroplast transformation involves introducing regions of
- 30 cloned plastid DNA flanking a desired nucleotide sequence, for example, a selectable marker together with polynucleotide of interest into a suitable target tissue, using, for example, a biolistic or protoplast transformation method (e.g., calcium chloride or PEG mediated transformation). One to 1.5 kb flanking regions ("targeting

sequences") facilitate homologous recombination with the plastid genome, and allow the replacement or modification of specific regions of the plastome. Using this method, point mutations in the chloroplast 16S rRNA and rps12 genes, which confer resistance to spectinomycin and streptomycin, can be utilized as selectable markers for transformation (Svab et al., Proc. Natl. Acad. Sci., USA 87:8526-8530, 1990; Staub and Maliga, Plant Cell 4:39-45, 1992), resulted in stable homoplasmic transformants; at a frequency of approximately one per 100 bombardments of target leaves. The presence of cloning sites between these markers allowed creation of a plastid targeting vector for introduction of foreign genes (Staub and Maliga, EMBO J. 12:601-606, 1993). Substantial increases in transformation frequency are obtained by replacement of the recessive rRNA or r-protein antibiotic resistance genes with a dominant selectable marker, the bacterial aadA gene encoding the spectinomycin-detoxifying enzyme aminoglycoside-3'-adenyltransferase (Svab and Maliga, Proc. Natl. Acad. Sci., USA 90:913-917, 1993). Approximately 15 to 20 cell division cycles following transformation are generally required to reach a homoplastic state. Plastid expression, in which genes are inserted by homologous recombination into all of the several thousand copies of the circular plastid genome present in each plant cell, takes advantage of the enormous copy number advantage over nuclear-expressed genes to permit expression levels that can readily exceed 10% of the total soluble plant protein.

Plants suitable to treatment according to a method of the invention can be monocots or dicots and include, but are not limited to, corn (*Zea mays*), *Brassica* sp. (e.g., *B. napus*, *B. rapa*, *B. juncea*), particularly those *Brassica* species useful as sources of seed oil, alfalfa (*Medicago sativa*), rice (*Oryza sativa*), rye (*Secale cereale*), sorghum (*Sorghum bicolor*, *Sorghum vulgare*), millet (e.g., pearl millet (*Pennisetum glaucum*), proso millet (*Panicum miliaceum*), foxtail millet (*Setaria italica*), finger millet (*Eleusine coracana*)), sunflower (*Helianthus annuus*), safflower (*Carthamus tinctorius*), wheat (*Triticum aestivum*), soybean (*Glycine max*), tobacco (*Nicotiana tabacum*), potato (*Solanum tuberosum*), peanuts (*Arachis hypogaea*), cotton (*Gossypium barbadense*, *Gossypium hirsutum*), sweet potato (*Ipomoea batatas*), cassava (*Manihot esculenta*), coffee (*Cofea* spp.), coconut (*Cocos nucifera*), pineapple (*Ananas comosus*), citrus trees (*Citrus* spp.), cocoa (*Theobroma cacao*), tea

- (*Camellia sinensis*), banana (*Musa* spp.), avocado (*Persea utililane*), fig (*Ficus casica*), guava (*Psidium guajava*), mango (*Mangifera indica*), olive (*Olea europaea*), papaya (*Carica papaya*), cashew (*Anacardium occidentale*), macadamia (*Macadamia integrifolia*), almond (*Prunus amygdalus*), sugar beets (*Beta vulgaris*), sugarcane (*Saccharum* spp.), oats, duckweed (*Lemna*), barley, tomatoes (*Lycopersicon esculentum*), lettuce (e.g., *Lactuca sativa*), green beans (*Phaseolus vulgaris*), lima beans (*Phaseolus limensis*), peas (*Lathyrus* spp.), and members of the genus *Cucumis* such as cucumber (*C. sativus*), cantaloupe (*C. cantalupensis*), and musk melon (*C. melo*).
- Ornamentals such as azalea (*Rhododendron* spp.), hydrangea (*Macrophylla hydrangea*), hibiscus (*Hibiscus rosasanensis*), roses (*Rosa* spp.), tulips (*Tulipa* spp.), daffodils (*Narcissus* spp.), petunias (*Petunia hybrida*), carnation (*Dianthus caryophyllus*), poinsettia (*Euphorbia pulcherrima*), and chrysanthemum are also included. Additional ornamentals within the scope of the invention include impatiens, Begonia, Pelargonium, Viola, Cyclamen, Verbena, Vinca, Tagetes, Primula, Saint Paulia, Agertum, Amaranthus, Antihirrhinum, Aquilegia, Cineraria, Clover, Cosmo, Cowpea, Dahlia, Datura, Delphinium, Gerbera, Gladiolus, Gloxinia, Hippeastrum, Mesembryanthemum, Salpiglossos, and Zinnia.
- Conifers that may be employed in practicing the present invention include, for example, pines such as loblolly pine (*Pinus taeda*), slash pine (*Pinus elliotii*), ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), and Monterey pine (*Pinus radiata*), Douglas-fir (*Pseudotsuga menziesii*); Western hemlock (*Tsuga utililane*); Sitka spruce (*Picea glauca*); redwood (*Sequoia sempervirens*); true firs such as silver fir (*Abies amabilis*) and balsam fir (*Abies balsamea*); and cedars such as Western red cedar (*Thuja plicata*) and Alaska yellow-cedar (*Chamaecyparis nootkatensis*).
- Leguminous plants which may be used in the practice of the present invention include beans and peas. Beans include guar, locust bean, fenugreek, soybean, garden beans, cowpea, mungbean, lima bean, fava bean, lentils, chickpea, etc. Legumes include, but are not limited to, *Arachis*, e.g., peanuts, *Vicia*, e.g., crown vetch, hairy vetch, adzuki bean, mung bean, and chickpea, *Lupinus*, e.g., lupine, trifolium, *Phaseolus*, e.g., common bean and lima bean, *Pisum*, e.g., field bean, *Melilotus*, e.g.,

clover, *Medicago*, e.g., alfalfa, Lotus, e.g., trefoil, lens, e.g., lentil, and false indigo. Preferred forage and turf grass for use in the methods of the invention include alfalfa, orchard grass, tall fescue, perennial ryegrass, creeping bent grass, and redtop.

Other plants within the scope of the invention include *Acacia*, aneth, artichoke,

- 5 arugula, blackberry, canola, cilantro, clementines, escarole, eucalyptus, fennel, grapefruit, honey dew, jicama, kiwifruit, lemon, lime, mushroom, nut, okra, orange, parsley, persimmon, plantain, pomegranate, poplar, radiata pine, radicchio, Southern pine, sweetgum, tangerine, triticale, vine, yams, apple, pear, quince, cherry, apricot, melon, hemp, buckwheat, grape, raspberry, chenopodium, blueberry, nectarine, peach,
- 10 plum, strawberry, watermelon, eggplant, pepper, cauliflower, Brassica, e.g., broccoli, cabbage, ultilan sprouts, onion, carrot, leek, beet, broad bean, celery, radish, pumpkin, endive, gourd, garlic, snapbean, spinach, squash, turnip, ultilane, chicory, groundnut and zucchini.

- Angiosperms are divided into two broad classes based on the number of
- 15 cotyledons, which are seed leaves that generally store or absorb food; a monocotyledonous angiosperm has a single cotyledon, and a dicotyledonous angiosperm has two cotyledons. Angiosperms produce a variety of useful products including materials such as lumber, rubber, and paper; fibers such as cotton and linen; herbs and medicines such as quinine and vinblastine; ornamental flowers such as
- 20 roses and orchids; and foodstuffs such as grains, oils, fruits and vegetables.

- Angiosperms encompass a variety of flowering plants, including, for example, cereal plants, leguminous plants, oilseed plants, hardwood trees, fruit-bearing plants and ornamental flowers, which general classes are not necessarily exclusive. Cereal plants, which produce an edible grain cereal, include, for example, corn, rice, wheat,
- 25 barley, oat, rye, orchardgrass, guinea grass, sorghum and turfgrass. Leguminous plants include members of the pea family (*Fabaceae*) and produce a characteristic fruit known as a legume. Examples of leguminous plants include, for example, soybean, pea, chickpea, moth bean, broad bean, kidney bean, lima bean, lentil, cowpea, dry bean, and peanut, as well as alfalfa, birdsfoot trefoil, clover and sainfoin.
- 30 Oilseed plants, which have seeds that are useful as a source of oil, include soybean, sunflower, rapeseed (canola) and cottonseed.

Angiosperms also include hardwood trees, which are perennial woody plants that generally have a single stem (trunk). Examples of such trees include alder, ash, aspen, basswood (linden), beech, birch, cherry, cottonwood, elm, eucalyptus, hickory, locust, maple, oak, persimmon, poplar, sycamore, walnut, sequoia, and willow. Trees
5 are useful, for example, as a source of pulp, paper, structural material and fuel.

Angiosperms are fruit-bearing plants that produce a mature, ripened ovary, which generally contains seeds. A fruit can be suitable for human or animal consumption or for collection of seeds to propagate the species. For example, hops are a member of the mulberry family that are prized for their flavoring in malt liquor.
10 Fruit-bearing angiosperms also include grape, orange, lemon, grapefruit, avocado, date, peach, cherry, olive, plum, coconut, apple and pear trees and blackberry, blueberry, raspberry, strawberry, pineapple, tomato, cucumber and eggplant plants. An ornamental flower is an angiosperm cultivated for its decorative flower. Examples of commercially important ornamental flowers include rose, orchid, lily, tulip and
15 chrysanthemum, snapdragon, camellia, carnation and petunia plants. The skilled artisan will recognize that the methods of the invention can be practiced using these or other angiosperms, as desired, as well as gymnosperms, which do not produce seeds in a fruit.

A method of producing a transgenic plant can be performed by introducing a
20 polynucleotide portion of plant stress-regulated gene into a plant cell genome, whereby the polynucleotide portion of the plant stress-regulated gene modulates a response of the plant cell to a stress condition, thereby producing a transgenic plant, which comprises plant cells that exhibit altered responsiveness to the stress condition. In one embodiment, the polynucleotide portion of the plant stress-regulated gene
25 encodes a stress-regulated polypeptide or functional peptide portion thereof, wherein expression of the stress-regulated polypeptide or functional peptide portion thereof either increases the stress tolerance of the transgenic plant, or decreases the stress tolerance of the transgenic plant. The polynucleotide portion of the plant stress-regulated gene encoding the stress-regulated polypeptide or functional peptide portion
30 thereof can be operatively linked to a heterologous promoter.

In another embodiment, the polynucleotide portion of the plant stress-regulated gene comprises a stress-regulated regulatory element. The stress-regulated

regulatory element can integrate into the plant cell genome in a site-specific manner, whereupon it can be operatively linked to an endogenous nucleotide sequence, which can be expressed in response to a stress condition specific for the regulatory element; or can be a mutant regulatory element, which is not responsive to the stress condition, whereby upon integrating into the plant cell genome, the mutant regulatory element disrupts an endogenous stress-regulated regulatory element of a plant stress-regulated gene, thereby altering the responsiveness of the plant stress-regulated gene to the stress condition. Accordingly, the invention also provides genetically modified plants, including transgenic plants, produced by such a method, and a plant cell obtained from such genetically modified plant, wherein said plant cell exhibits altered responsiveness to the stress condition; a seed produced by a transgenic plant; and a cDNA library prepared from a transgenic plant.

Also provided is a method of modulating the responsiveness of a plant cell to a stress condition. Such a method can be performed, for example, by introducing a polynucleotide portion of a plant stress-regulated gene into the plant cell, thereby modulating the responsiveness of the plant cell to a stress condition. As disclosed herein, the responsiveness of the plant cell can be increased or decreased upon exposure to the stress condition, and the altered responsiveness can result in increased or decreased tolerance of the plant cell to a stress condition. The polynucleotide portion of the plant stress-regulated gene can, but need not, be integrated into the genome of the plant cell, thereby modulating the responsiveness of the plant cell to the stress condition. Accordingly, the invention also provide a genetically modified plant, including a transgenic plant, which contains an introduced polynucleotide portion of a plant stress-regulated gene, as well as plant cells, tissues, and the like, which exhibit modulated responsiveness to a stress condition.

The polynucleotide portion of the plant stress-regulated gene can encode a stress-regulated polypeptide or functional peptide portion thereof, which can be operatively linked to a heterologous promoter. As used herein, reference to a "functional peptide portion of a plant stress-regulated polypeptide" means a contiguous amino acid sequence of the polypeptide that has an activity of the full length polypeptide, or that has an antagonist activity with respect to the full length polypeptide, or that presents an epitope unique to the polypeptide. Thus, by

expressing a functional peptide portion of a plant stress-regulated polypeptide in a plant cell, the peptide can act as an agonist or an antagonist of the polypeptide, thereby modulating the responsiveness of the plant cell to a stress condition.

A polynucleotide portion of the plant stress-regulated nucleotide sequence also
5 can contain a mutation, whereby upon integrating into the plant cell genome, the polynucleotide disrupts (knocks-out) an endogenous plant stress-regulated nucleotide sequence, thereby modulating the responsiveness of said plant cell to the stress condition. Depending on whether the knocked-out gene encodes an adaptive or a maladaptive stress-regulated polypeptide, the responsiveness of the plant will be
10 modulated accordingly. Thus, a method of the invention provides a means of producing a transgenic plant having a knock-out phenotype of a plant stress-regulated nucleotide sequence.

Alternatively, the responsiveness of a plant or plant cell to a stress condition can be modulated by use of a suppressor construct containing dominant negative
15 mutation for any of the stress-regulated sequences described herein. Expression of a suppressor construct containing a dominant mutant mutation generates a mutant transcript that, when coexpressed with the wild-type transcript inhibits the action of the wild-type transcript. Methods for the design and use of dominant negative constructs are well known (see, for example, in Herskowitz, Nature 329:219-222,
20 1987; Lagna and Hemmati-Brivanlou, Curr. Topics Devel. Biol. 36:75-98, 1998).

The polynucleotide portion of the plant stress-regulated gene also can comprise a stress-regulated regulatory element, which can be operatively linked to a heterologous nucleotide sequence, which, upon expression from the regulatory
25 element in response to a stress condition, modulates the responsiveness of the plant cell to the stress condition. Such a heterologous nucleotide sequence can encode, for example, a stress-inducible transcription factor such as DREB1A, which, upon exposure to the stress condition, is expressed such that it can amplify the stress response (see Kasuga et al., *supra*, 1999). The heterologous nucleotide sequence also can encode a polynucleotide that is specific for a plant stress-regulated gene, for
30 example, an antisense molecule, a ribozyme, and a triplexing agent, either of which, upon expression in the plant cell, reduces or inhibits expression of a stress-regulated polypeptide encoded by the gene, thereby modulating the responsiveness of the plant

cell to a stress condition, for example, an abnormal level of cold, osmotic pressure, and salinity. As used herein, the term "abnormal," when used in reference to a condition such as temperature, osmotic pressure, salinity, or any other condition that can be a stress condition, means that the condition varies sufficiently from a range generally considered optimum for growth of a plant that the condition results in an induction of a stress response in a plant. Methods of determining whether a stress response has been induced in a plant are disclosed herein or otherwise known in the art.

- A plant stress-regulated regulatory element can be operatively linked to a heterologous polynucleotide sequence, such that the regulatory element can be introduced into a plant genome in a site-specific matter by homologous recombination. For example, a mutant plant stress-regulated regulatory element for a maladaptive stress-induced polypeptide can be transformed into a plant genome in a site specific manner by *in vivo* mutagenesis, using a hybrid RNA-DNA oligonucleotide ("chimeroplast" (TIBTECH 15:441- 447, 1997; W0 95/15972; Kren, Hepatology 25:1462-1468, 1997; Cole-Strauss, Science 273:1386-1389, 1996, each of which is incorporated herein by reference). Part of the DNA component of the RNA-DNA oligonucleotide is homologous to a nucleotide sequence comprising the regulatory element of the maladaptive gene, but includes a mutation or contains a heterologous region which is surrounded by the homologous regions. By means of base pairing of the homologous regions of the RNA-DNA oligonucleotide and of the endogenous nucleic acid molecule, followed by a homologous recombination the mutation contained in the DNA component of the RNA-DNA oligonucleotide or the heterologous region can be transferred to the plant genome, resulting in a "mutant" gene that, for example, is not induced in response to a stress and, therefore, does not confer the maladaptive phenotype. Such a method similarly can be used to knock-out the activity of a stress-regulated gene, for example, in an undesirable plant. Such a method can provide the advantage that a desirable wild-type plant need not compete with the undesirable plant, for example, for light, nutrients, or the like.
- A method of modulating the responsiveness of a plant cell to a stress condition also can be performed by introducing a mutation in the chromosomal copy of a plant stress-regulated gene, for example, in the stress-regulated regulatory element, by

transforming a cell with a chimeric oligonucleotide composed of a contiguous stretch of RNA and DNA residues in a duplex conformation with double hairpin caps on the ends. An additional feature of the oligonucleotide is the presence of 2'-O- methylation at the RNA residues. The RNA/DNA sequence is designed to align with the sequence of a chromosomal copy of the target regulatory element and to contain the desired nucleotide change (see U.S. Pat. No. 5,501,967, which is incorporated herein by reference).

A plant stress-regulated regulatory element also can be operatively linked to a heterologous polynucleotide such that, upon expression from the regulatory element in the plant cell, confers a desirable phenotype on the plant cell. For example, the heterologous polynucleotide can encode an aptamer, which can bind to a stress-induced polypeptide. Aptamers are nucleic acid molecules that are selected based on their ability to bind to and inhibit the activity of a protein or metabolite. Aptamers can be obtained by the SELEX (Systematic Evolution of Ligands by Exponential Enrichment) method (see U.S. Pat. No. 5,270,163), wherein a candidate mixture of single stranded nucleic acids having regions of randomized sequence is contacted with a target, and those nucleic acids having a specific affinity to the target are partitioned from the remainder of the candidate mixture, and amplified to yield a ligand enriched mixture. After several iterations a nucleic acid molecule (aptamer) having optimal affinity for the target is obtained. For example, such a nucleic acid molecule can be operatively linked to a plant stress-regulated regulatory element and introduced into a plant. Where the aptamer is selected for binding to a polypeptide that normally is expressed from the regulatory element and is involved in an adaptive response of the plant to a stress, the recombinant molecule comprising the aptamer can be useful for inhibiting the activity of the stress-regulated polypeptide, thereby decreasing the tolerance of the plant to the stress condition.

The invention provides a genetically modified plant, which can be a transgenic plant, that is tolerant or resistant to a stress condition. As used herein, the term "tolerant" or "resistant," when used in reference to a stress condition of a plant, means that the particular plant, when exposed to a stress condition, shows less of an effect, or no effect, in response to the condition as compared to a corresponding reference plant (naturally occurring wild-type plant or a plant not containing a construct of the

present invention). As a consequence, a plant encompassed within the present invention grows better under more widely varying conditions, has higher yields and/or produces more seeds. Thus, a transgenic plant produced according to a method of the invention can demonstrate protection (as compared to a corresponding reference plant) from a delay to complete inhibition of alteration in cellular metabolism, or reduced cell growth or cell death caused by the stress. Preferably, the transgenic plant is capable of substantially normal growth under environmental conditions where the corresponding reference plant shows reduced growth, metabolism or viability, or increased male or female sterility.

The determination that a plant modified according to a method of the invention has increased resistance to a stress-inducing condition can be made by comparing the treated plant with a control (reference) plant using well known methods. For example, a plant having increased tolerance to saline stress can be identified by growing the plant on a medium such as soil, which contains a higher content of salt in the order of at least about 10% compared to a medium the corresponding reference plant is capable of growing on. Advantageously, a plant treated according to a method of the invention can grow on a medium or soil containing at least about 50%, or more than about 75%, particularly at least about more than 100%, and preferably more than about 200% salt than the medium or soil on which a corresponding reference plant can grow. In particular, such a treated plant can grow on medium or soil containing at least 40 mM, generally at least 100 mM, particularly at least 200 mM, and preferably at least 300 mM salt, including, for example, a water soluble inorganic salt such as sodium sulfate, magnesium sulfate, calcium sulfate, sodium chloride, magnesium chloride, calcium chloride, potassium chloride, or the like; salts of agricultural fertilizers, and salts associated with alkaline or acid soil conditions; particularly NaCl.

In another embodiment, the invention provides a plant that is less tolerant or less resistant to a stress condition as compared to a corresponding reference plant. As used herein, the term "less tolerant" or "less resistant," when used in reference to a stress condition of a plant, means that the particular plant, when exposed to a stress condition, shows an alteration in response to the condition as compared to a corresponding reference plant. As a consequence, such a plant, which generally is an

undesirable plant species, is less likely to grow when exposed to a stress condition than an untreated plant.

The present invention also relates to a method of expressing a heterologous nucleotide sequence in a plant cell. Such a method can be performed, for example, by introducing into the plant cell a plant stress-regulated regulatory element operatively linked to the heterologous nucleotide sequence, whereby, upon exposure of the plant cell to stress condition, the heterologous nucleotide sequence is expressed in the plant cell. The heterologous nucleotide sequence can encode a selectable marker, or preferably, a polypeptide that confers a desirable trait upon the plant cell, for example, a polypeptide that improves the nutritional value, digestibility or ornamental value of the plant cell, or a plant comprising the plant cell. Accordingly, the invention provides a transgenic plant that, in response to a stress condition, can produce a heterologous polypeptide from a plant stress-regulated regulatory element. Such transgenic plants can provide the advantage that, when grown in a cold environment for example, expression of the heterologous polypeptide from a plant cold-regulated regulatory element can result in increased nutritional value of the plant.

The present invention further relates to a method of modulating the activity of a biological pathway in a plant cell, wherein the pathway involves a stress-regulated polypeptide. As used herein, reference to a pathway that "involves" a stress-regulated polypeptide means that the polypeptide is required for normal function of the pathway. For example, plant stress-regulated polypeptides as disclosed herein include those acting as kinases or as transcription factors, which are well known to be involved in signal transduction pathways. As such, a method of the invention provides a means to modulate biological pathways involving plant stress-regulated polypeptides, for example, by altering the expression of the polypeptides in response to a stress condition. Thus, a method of the invention can be performed, for example, by introducing a polynucleotide portion of a plant stress-regulated gene into the plant cell, thereby modulating the activity of the biological pathway.

A method of the invention can be performed with respect to a pathway involving any of the stress-regulated polypeptides as encoded by a polynucleotide of SEQ ID NOS:1-2703, including for example, a stress-regulated transcription factor, an enzyme, including a kinase, a channel protein (see, for example, Tables 29-31; see,

also, Table 1). Pathways in which the disclosed stress-regulated stress factors are involved can be identified, for example, by searching the Munich Information Center for Protein Sequences (MIPS) *Arabidopsis thaliana* database (MATDB), which is at <http://www.mips.biochem.mpg.de/proj/thal/>.

5 The present invention also relates to a method of identifying a polynucleotide that modulates a stress response in a plant cell. Such a method can be performed, for example, by contacting an array of probes representative of a plant cell genome and nucleic acid molecules expressed in plant cell exposed to the stress; detecting a nucleic acid molecule that is expressed at a level different from a level of expression
10 in the absence of the stress; introducing the nucleic acid molecule that is expressed differently into a plant cell; and detecting a modulated response of the plant cell containing the introduced nucleic acid molecule to a stress, thereby identifying a polynucleotide that modulates a stress response in a plant cell. The contacting is under conditions that allow for selective hybridization of a nucleic acid molecule with
15 probe having sufficient complementarity, for example, under stringent hybridization conditions.

As used herein, the term "array of probes representative of a plant cell genome" means an organized group of oligonucleotide probes that are linked to a solid support, for example, a microchip or a glass slide, wherein the probes can
20 hybridize specifically and selectively to nucleic acid molecules expressed in a plant cell. Such an array is exemplified herein by a GeneChip® *Arabidopsis* Genome Array (Affymetrix; see Example 1). In general, an array of probes that is "representative" of a plant genome will identify at least about 30% or the expressed nucleic acid molecules in a plant cell, generally at least about 50% or 70%, particularly at least
25 about 80% or 90%, and preferably will identify all of the expressed nucleic acid molecules. It should be recognized that the greater the representation, the more likely all nucleotide sequences of cluster of stress-regulated genes will be identified.

A method of the invention is exemplified in Example 1, wherein clusters of *Arabidopsis* genes induced to cold, to increased salinity, to increased osmotic
30 pressure, and to a combination of the above three stress conditions were identified. Based on the present disclosure, the artisan readily can obtain nucleic acid samples for *Arabidopsis* plants exposed to other stress conditions, or combinations of stress

conditions, and identify clusters of genes induced in response to the stress conditions. Similarly, the method is readily adaptable to identifying clusters of stress-regulated genes expressed in other plant species, particularly commercially valuable plant species, where a substantial amount of information is known regarding the genome.

5 The clusters of genes identified herein include those clusters of genes that are induced or repressed in response to a combination of stress conditions, but not to any of the stress conditions alone; and clusters of genes that are induced or repressed in response to a selected stress condition, but not to other stress conditions tested. Furthermore, clusters of genes that respond to a stress condition in a temporally
10 regulated manner are also included, such as gene clusters that are induced early (for example, within about 3 hours), late (for example, after about 8 to 24 hours), or continuously in a stress response. In addition, the genes within a cluster are represented by a variety of cellular proteins, including transcription factors, enzymes such as kinases, channel proteins, and the like (see Tables 1 and 29-31). Thus, the
15 present invention further characterizes nucleotide sequences that previously were known to encode cellular peptides by classifying them within clusters of stress-regulated genes.

 The present invention additionally relates to a method of identifying a stress condition to which a plant cell was exposed. Such a method can be performed, for
20 example, by contacting nucleic acid molecules expressed in the plant cell and an array of probes representative of the plant cell genome; and detecting a profile of expressed nucleic acid molecules characteristic of a stress response, thereby identifying the stress condition to which the plant cell was exposed. The contacting generally is under conditions that allow for selective hybridization of a nucleic acid molecule with
25 probe having sufficient complementarity, for example, under stringent hybridization conditions. The profile can be characteristic of exposure to a single stress condition, for example, an abnormal level of cold, osmotic pressure, or salinity (Tables 3-14), or can be characteristic of exposure to more than one stress condition (Tables 15-26, for example, cold, increased osmotic pressure and increased salinity (see Tables 24-26).

30 The method can be practiced using at least one nucleic acid probe and can identify one or combination of stress conditions by detecting altered expression of one or a plurality of polynucleotides representative of plant stress-regulated genes. As

used herein, the term "at least one" includes one, two, three or more, for example, five, ten, twenty, fifty or more polynucleotides, nucleic acid probes, and the like. The term "plurality" is used herein to mean two or more, for example, three, four, five or more, including ten, twenty, fifty or more polynucleotides, nucleic acid probes, and the like.

In a method of the invention, nucleic acid samples from the plant cells to be collected can be contacted with an array, then the profile can be compared with known expression profiles prepared from nucleic acid samples of plants exposed to a known stress condition or combination of stress conditions. By creating a panel of such profiles, representative of various stress conditions, an unknown stress condition to which a plant was exposed can be identified simply by comparing the unknown profile with the known profiles and determining which known profile that matches the unknown profile. Preferably, the comparison is automated. Such a method can be useful, for example, to identify a cause of damage to a crop, where the condition causing the stress is not known or gradually increases over time. For example, accumulation in soils over time of salts from irrigation water can result in gradually decreasing crop yields. Because the accumulation is gradual, the cause of the decreased yield may not be readily apparent. Using the present methods, it is possible to evaluate the stress to which the plants are exposed, thus revealing the cause of the decreased yields.

The present invention, therefore includes a computer readable medium containing executable instructions for receiving expression data for sequences substantially similar to any of those disclosed herein and comparing expression data from a test plant to a reference plant that has been exposed to an abiotic stress. Also provided is a computer-readable medium containing sequence data for sequences substantially similar to any of the sequences described herein, or the complements thereof, and a module for comparing such sequences to other nucleic acid sequences.

Also provided are plants and plant cells comprising plant stress-regulatory elements of the present invention operably linked to a nucleotide sequence encoding a detectable signal. Such plants can be used as diagnostic or "sentinel" plants to provide early warning that nearby plants are being stressed so that appropriate actions can be taken. In one embodiment, the signal is one that alters the appearance of the

plant. For example, an osmotic stress regulatory element of the present invention can be operably linked to a nucleotide sequence encoding a fluorescent protein such as green fluorescent protein. When subjected to osmotic stress, the expression of the green fluorescent protein in the sentinel plant provides a visible signal so that appropriate actions can be taken to remove or alleviate the stress. The use of fluorescent proteins in plants is well known (see, for example, in Leffell et al., BioTechniques 23:912, 1997).

The invention further relates to a method of identifying an agent that modulates the activity of a stress-regulated regulatory element of a plant. As used herein, the term "modulate the activity," when used in reference to a plant stress-regulated regulatory element, means that expression of a polynucleotide from the regulatory element is increased or decreased. In particular, expression can be increased or decreased with respect to the basal activity of the promoter, i.e., the level of expression, if any, in the absence of a stress condition that normally induces expression from the regulatory element; or can be increased or decreased with respect to the level of expression in the presence of the inducing stress condition. As such, an agent can act as a mimic of a stress condition, or can act to modulate the response to a stress condition.

Such a method can be performed, for example, by contacting the regulatory element with an agent suspected of having the ability to modulate the activity of the regulatory element, and detecting a change in the activity of the regulatory element. In one embodiment, the regulatory element can be operatively linked to a heterologous polynucleotide encoding a reporter molecule, and an agent that modulates the activity of the stress-regulated regulatory element can be identified by detecting a change in expression of the reporter molecule due to contacting the regulatory element with the agent. Such a method can be performed *in vitro* in a plant cell-free system, or in a plant cell in culture or in a plant *in situ*.

A method of the invention also can be performed by contacting the agent is contacted with a genetically modified cell or a transgenic plant containing an introduced plant stress-regulated regulatory element, and an agent that modulates the activity of the regulatory element is identified by detecting a phenotypic change in the modified cell or transgenic plant.

A method of the invention can be performed in the presence or absence of the stress condition to which the particularly regulatory element is responsive. As such, the method can identify an agent that modulates the activity of plant stress-regulated promoter in response to the stress, for example, an agent that can enhance the stress response or can reduce the stress response. In particular, a method of the invention can identify an agent that selectively activates the stress-regulated regulatory elements of a cluster of plant stress-regulated genes, but does not affect the activity of other stress-regulated regulatory genes. As such, the method provides a means to identify an agent that acts as a stress mimic. Such agents can be particularly useful to prepare a plant to an expected stress condition. For example, an agent that acts as a cold mimic can be applied to a field of plants prior to the arrival of an expected cold front. Thus, the cold stress response can be induced prior to the actual cold weather, thereby providing the plants with the protection of the stress response, without the plants suffering from any initial damage due to the cold. Similarly, an osmotic pressure mimic can be applied to a crop of plants prior a field being flooded by a rising river.

In one embodiment, the present invention provides a method for marker-assisted selection. Marker-assisted selection involves the selection of plants having desirable phenotypes based on the presence of particular nucleotide sequences ("markers"). The use of markers allows plants to be selected early in development, often before the phenotype would normally be manifest. Because it allows for early selection, marker-assisted selection decreases the amount of time need for selection and thus allows more rapid genetic progress.

Briefly, marker-assisted selection involves obtaining nucleic acid from a plant to be selected. The nucleic acid obtained is then probed with probes that selectively hybridize under stringent, preferably highly stringent, conditions to a nucleotide sequence or sequences associated with the desired phenotype. In one embodiment, the probes hybridize to any of the stress-responsive genes or regulatory regions disclosed herein, for example, any one of SEQ ID NOS:1-2703. The presence of any hybridization products formed is detected and plants are then selected on the presence or absence of the hybridization products.

The following examples are intended to illustrate but not limit the invention.

EXAMPLE 1

PROFILING OF PLANT STRESS-REGULATED GENES

This example demonstrates that clusters of stress-regulated genes can be identified in plant cells exposed to various stress conditions, either alone or in combination.

A GeneChip® Arabidopsis Genome Array (Affymetrix, Santa Clara, CA) was used to identify clusters of genes that were coordinately induced in response to various stress conditions. The GeneChip® Arabidopsis Genome Array contains probes synthesized *in situ* and is designed to measure temporal and spatial gene expression of approximately 8700 genes in greater than 100 EST clusters. The sequences used to develop the array were obtained from GenBank (<http://www.ncbi.nlm.nih.gov/>) in collaboration with Torrey Mesa Research Institute (San Diego, CA), formerly known as Novartis Agriculture Discovery Institute. Eighty percent of the nucleotide sequences represented on the array are predicted coding sequences from genomic BAC entries; twenty percent are high quality cDNA sequences. The array also contains over 100 EST clusters that share homology with the predicted coding sequences from BAC clones (see, for example, world wide web at address ([url](http://www.affymetrix.com/products/Arabidopsis_content.html)) "[affymetrix.com/products/Arabidopsis_content.html](http://www.affymetrix.com/products/Arabidopsis_content.html)").

The Affymetrix GeneChip® array was used to define nucleotide sequences/ pathways affected by various abiotic stresses and to define which are uniquely regulated by one stress and those that respond to multiple stress, and to identify candidate nucleotide sequences for screening for insertional mutants. Of the approximately 8,700 nucleotide sequences represented on the Affymetrix GeneChip® array, 2862 nucleotide sequences showed at least a 2-fold change in expression in at least one sample, relative to no-treatment controls. Of those 2,862 nucleotide sequences 1,335 were regulated only by cold stress, 166 were regulated only mannitol stress and 209 were regulated only by saline stress. Furthermore, of the 2,862 nucleotide sequences 123 nucleotide sequences were regulated by salt and mannitol stress, 293 were regulated by mannitol and cold stress, 274 were regulated by cold and saline stress and 462 were regulated by cold, mannitol and salt. Of the 2,862 nucleotide sequences, 771 passed the higher stringency of showing at least a

2-fold change in expression in at least 2 samples, relative to control. And, 508 of the 771 nucleotide sequences were found in an in-house collection of insertion mutants.

The following describes in more detail how the experiments were done.

Transcriptional profiling was performed by hybridizing fluorescence labeled cRNA with
5 the oligonucleotide probes on the chip, washing, and scanning. Each gene is represented on the chip by about sixteen oligonucleotides (25-mers). Expression level is related to fluorescence intensity. Starting material contained 1 to 10 Tg total RNA; detection specificity was about $1:10^6$; approximately a 2-fold change was detectable, with less than 2% false positive; the dynamic range was approximately 500x.
10 Nucleotide sequences having up to 70% to 80% identity could be discriminated using this system.

Seven day old axenic *Arabidopsis* seedlings were transferred to Magenta boxes with rafts floating on MS medium. Three weeks later (28 day old seedlings), stresses were applied as follows: Control - no treatment; Cold - Magenta box placed in ice;
15 Mannitol - medium + 200 mM mannitol; Salt - medium + 100 mM NaCl. Tissue samples were collected at 3 hours and 27 hours into the stress, roots and aerial portions were harvested, RNA was purified, and the samples were analyzed using the GeneChip® *Arabidopsis* Genome Array (Affymetrix, Santa Clara, CA) following the manufacturer's protocol.

20 Raw fluorescence values as generated by Affymetrix software were processed as follows: the values were brought into Microsoft Excel and values of 25 or less were set to 25 (an empirically determined baseline, Zhu and Wang, Plant Physiol. 124:1472-1476; 2000). The values from the stressed samples were then converted to fold change relative to control by dividing the values from the stressed samples by the values from
25 the no-treatment control samples. Expression patterns that were altered at least 2-fold with respect to the control were selected. This method gave very robust results and resulted in a larger number of nucleotide sequences called as stress-regulated than previous methods had permitted.

Based on the profiles obtained following hybridization of nucleic acid molecules
30 obtained from plant cells exposed to various stress conditions to the probes in the microarray, clusters of nucleotide sequences that were altered in response to the stress

conditions were identified (see Tables 3-6, cold responsive; Tables 7-10, salt (saline) responsive; Tables 11 to 14, mannitol (osmotic) responsive; Tables 15-17, cold and mannitol responsive; Tables 18-20, 6 salt and cold responsive; Tables 21-23, salt and mannitol responsive; Tables 24-26, cold, salt and mannitol responsive. Examples of
5 plant gene sequences that varied in expression at least two-fold in response to a combination of cold, saline and osmotic stress in root cells and leaf cells are shown in Tables 27 and 28, respectively. In addition, examples of plant gene sequences that encode transcription factors (Table 29), phosphatases (Table 30), and kinases (Table 31) and that varied at least two-fold in response to a combination of cold, saline and osmotic
10 stress are provided.

Affymetrix ID numbers and corresponding SEQ ID NOS: for the respective *Arabidopsis* nucleotide sequences are provided Tables 3-26, and can be used to determine SEQ ID NOS: for the sequences shown by Affymetrix ID number in Tables 27-31. The Affymetrix ID number refers to a particular nucleotide sequence on
15 the GeneChip® Arabidopsis Genome Array. In some cases, a particular plant stress-regulated gene sequence hybridized to more than one nucleotide sequence on the GeneChip® Arabidopsis Genome Array (see, for example, Table 3, where SEQ ID NO:36 is shown to have hybridized to the 12187_AT and 15920_I_AT nucleotide sequences on the GeneChip®). In addition, it should be recognized that the disclosed
20 sequences are not limited to coding sequences but, in some cases, include 5' untranslated sequences (see Table 2) or a longest coding region. As such, while the sequences set forth as SEQ ID NOS:1-2073 generally start with an ATG codon, in most cases each comprises a longer nucleotide sequence, including a regulatory region (see Table 2).

The results disclosed herein demonstrate that several polynucleotides, some of
25 which were known to function as transcription factors, enzymes, and structural proteins, also are involved in the response of a plant cell to stress. The identification of the clusters of stress-regulated genes as disclosed herein provides a means to identify stress-regulated regulatory elements present in *Arabidopsis thaliana* nucleotide sequences, including consensus regulatory elements. It should be recognized, however that the
30 regulatory elements of the plant genes comprising a sequence as set forth in SEQ ID NOS:156, 229, 233, 558, 573, 606, 625, 635, 787, and 813, which previously have

been described as cold regulated genes, are not encompassed within the stress-regulated gene regulatory element of the invention, and the regulatory elements of the plant genes comprising the nucleotide sequences set forth as SEQ ID NOS:1263, 1386, 1391, 1405, 1445, 1484, 1589, 1609, 1634, 1726, 1866, 1918, and 1928, which
5 previously have been identified as genes that are responsive to a single stress condition such as cold or saline stress, are not encompassed within the plant stress-regulated gene regulatory elements of the invention to the extent that they confer stress-regulated expression only with respect to the known single stress. Furthermore, the identification of the *Arabidopsis* stress-regulated genes provides a means to identify
10 the corresponding homologs and orthologs in other plants, including commercially valuable food crops such as wheat, rice, soy, and barley, and ornamental plants. BLASTN and BLASTP searches to identify such sequences revealed the polynucleotide sequences set forth in Table 32.

Although the invention has been described with reference to the above example,
15 it will be understood that modifications and variations are encompassed within the spirit and scope of the invention. Accordingly, the invention is limited only by the claims, which follow Tables 1 to 32.

TABLE 1

SEQUENCE DESCRIPTIONS			
Seq ID	Description	Seq ID	Description
1	unknown protein	41	scarecrow-like 7 (SCL7)
2	unknown protein	42	putative protein
3	unknown protein	43	No function assigned by TIGR
4	putative auxin-induced protein	44	unknown protein
5	unknown protein	45	unknown protein
6	hypothetical protein		
7	putative protein	46	succinyl-CoA-ligase alpha subunit
8	unknown protein	47	putative protein
9	unknown protein	48	CLV1 receptor kinase like protein
10	unknown protein	49	putative receptor-like protein kinase
11	putative protein	50	putative squalene synthase
12	Thioredoxin - like protein	51	putative receptor protein kinase
13	putative RNA helicase	52	somatic embryogenesis receptor-like kinase, putative
14	putative protein	53	putative protein
15	putative protein	54	putative beta-glucosidase
16	RING zinc finger protein, putative	55	multi-drug resistance protein
17	putative cyclin	56	receptor protein kinase (TMK1), putative
18	putative protein	57	putative receptor-like protein kinase
19	putative protein	58	putative pectate lyase
20	unknown protein	59	putative protein kinase
21	putative protein	60	putative peroxidase
22	putative protein	61	cytochrome P450-like protein
23	hypothetical protein	62	putative beta-amylase
24	unknown protein	63	monosaccharide transporter STP3
25	hypothetical protein	64	Lycopersicon esculentum proteinase TMP, Pir2:T07617
26	unknown protein	65	putative receptor-like protein kinase
27	unknown protein	66	G-box-binding factor 1
28	unknown protein	67	amino acid carrier, putative
29	unknown protein	68	myb-related protein
30	putative protein	69	No function assigned by TIGR
31	putative protein	70	SNF1 like protein kinase
32	putative protein	71	Cu/Zn superoxide dismutase-like protein
33	unknown protein	72	putative protein kinase
34	putative ribonuclease III	73	small nuclear ribonucleoprotein U1A
35	unknown protein		
36	unknown protein		
37	unknown protein		
38	unknown protein		
39	unknown protein		
40	putative histidine kinase		

TABLE 1 (cont)

74	ras-like GTP-binding	101	dynein light chain like protein
protein		102	chaperonin CPN10
75	oleoyl-[acyl-carrier-protein]	103	putative bHLH transcription factor
	hydrolase-like protein	104	putative glyoxysomal malate
76	putative heat shock		dehydrogenase precursor
	transcription factor	105	ATP-dependent RNA helicase,
77	putative protein		putative
78	membrane-bound small	106	chlorophyll synthetase
	GTP-binding - like protein	107	similar to epoxide hydrolases
79	putative protein (fragment)	108	putative protein
80	indole-3-acetate beta-	109	unknown protein
	glucosyltransferase like	110	hypothetical protein
	protein	111	putative membrane transporter
81	HD-zip transcription factor	112	putative tyrosyl-tRNA synthetase
	(athb-8)	113	ARGININE/SERINE-RICH
82	putative cAMP-dependent		SPLICING FACTOR RSP31
	protein kinase	114	putative oxidoreductase
83	glucuronosyl transferase-	115	unknown protein
	like protein	116	linker histone protein, putative
84	putative leucine-rich repeat	117	hypothetical protein
	disease resistance protein	118	putative protein
85	98b like protein	119	putative mitochondrial carrier
86	putative receptor-like		protein
	protein kinase	120	putative transcription factor
87	IAA-Ala hydrolase (IAR3)	121	MYB-related protein
88	putative AP2 domain	122	myb-related transcription factor,
	transcription factor		putative
89	putative expansin	123	unknown protein
90	putative Ap2 domain	124	unknown protein
protein		125	putative glycine-rich protein
91	expansin (At-EXP1)	126	No function assigned by TIGR
92	cytochrome P450 - like	127	unknown protein
protein		128	unknown protein
93	putative ATP-dependent	129	unknown protein
	RNA helicase A	130	unknown protein
94	unknown protein	131	putative membrane channel protein
95	predicted protein	132	putative protein
96	putative glucosyltransferase	133	unknown protein
97	unknown protein	134	gamma glutamyl hydrolase,
98	putative xyloglucan-		putative
	specific glucanase	135	40S ribosomal protein S5
99	cysteine synthase	136	DnaJ-like protein
100	clathrin assembly protein	137	40S ribosomal protein S26
	API9 homolog	138	putative WRKY-type DNA binding
			protein

TABLE 1 (cont)

139	putative protein	161	putative photomorphogenesis repressor protein
140	hypothetical protein	162	SNF1-like protein kinase (AKin11)
141	putative ubiquitin-conjugating enzyme	163	thioredoxin h
142	peptidylprolyl isomerase	164	thioredoxin
ROCI		165	Ca ²⁺ -dependent lipid-binding protein, putative
143	glyceraldehyde-3-phosphate dehydrogenase C subunit (GapC)	166	putative auxin-induced protein
144	No function assigned by	167	putative bZIP transcription factor
TIGR		168	hypothetical protein
145	putative protein	169	putative AVR9 elicitor response protein
146	putative thioredoxin	170	putative serine/threonine protein kinase
147	thioredoxin h, putative	171	bZIP transcription factor ATB2
148	thioredoxin-like	172	putative spliceosome associated protein
149	allene oxide synthase (embCAA73184.1)	173	3-hydroxyisobutyryl-coenzyme A hydrolase - like protein
150	anthranilate synthase component I-1 precursor (spP32068)	174	putative protein
151	CELL DIVISION CONTROL PROTEIN 2 HOMOLOG A	175	putative Mutator-like transposase
152	protein kinase cdc2	176	putative protein
homolog B		177	unknown protein
153	ethylene responsive element binding factor 1 (frameshift !)	178	putative protein
154	ethylene responsive element binding factor 2 (ATERF2) (spO80338)	179	putative protein
155	ethylene responsive element binding factor 5 (ATERF5) (spO80341)	180	putative galactinol synthase
156	glucose-6-phosphate dehydrogenase	181	putative transcriptional regulator
157	photomorphogenesis repressor (COP1)	182	nuclear matrix constituent protein 1 (NMCP1)-like
158	unknown protein	183	putative DNA-binding protein RAV2
159	DNA (cytosine-5)-methyltransferase (DNA methyltransferase) (DNA metase) (spP34881)	184	No function assigned by TIGR
160	PROLIFERA	185	basic blue protein, 5' partial
		186	unknown protein
		187	putative calcium-binding protein, calreticulin
		188	putative pyrophosphate-fructose-6-phosphate 1-phosphotransferase
		189	ribosomal protein L11, cytosolic
		190	putative dTDP-glucose 4-6-dehydratase
		191	40S ribosomal protein S20-like protein
		192	60S ribosomal protein L24

TABLE 1 (cont)

193	coatomer-like protein, epsilon subunit	223	putative SF16 protein { <i>Helianthus annuus</i> }
194	glycoprotein(EP1), putative	224	unknown protein
195	putative SPL1-related protein	225	thioredoxin
196	unknown protein	226	trehalose-6-phosphate phosphatase (AtIPPB)
197	putative transport protein SEC61 beta-subunit	227	chlorophyll a/b-binding protein
198	unknown protein	228	class IV chitinase (CHIV)
199	putative cytochrome P450	229	chalcone synthase (naringenin-chalcone synthase) (testa 4 protein) (sp P13114)
200	UTP-glucose glucosyltransferase - like protein	230	unknown protein
201	60S ribosomal protein L23	231	cinnamyl-alcohol dehydrogenase ELI3-2
202	40S ribosomal protein S17	232	farnesyl-pyrophosphate synthetase FPS2
203	40S ribosomal protein S26	233	phospholipid hydroperoxide glutathione peroxidase
204	protein translation factor Sui1 homolog, putative	234	heat shock transcription factor HSF4
205	unknown protein	235	heat shock protein 101
206	gamma glutamyl hydrolase, putative	236	17.6 kDa heat shock protein (AA 1-156)
207	dTDP-glucose 4,6-dehydratase, putative	237	heat shock protein 17.6A
208	extensin - like protein	238	heat-shock protein
209	unknown protein	239	HY5
210	protein phosphatase 2C - like protein	240	putative auxin-induced protein, IAA12
211	ubiquitin-like protein	241	early auxin-induced protein, IAA19
212	protein phosphatase 2C-like protein	242	auxin-inducible gene (IAA2)
213	unknown protein	243	putative protein
214	putative RING zinc finger ankyrin protein	244	putative choline kinase
215	unknown protein	245	thymidylate kinase - like protein
216	putative rubisco subunit binding-protein alpha subunit	246	CTP synthase like protein
217	putative acetone-cyanohydrin lyase	247	putative protein
218	putative isoamylase	248	putative amidase
219	putative protein	249	4-alpha-glucanotransferase
220	HSP associated protein like	250	hypothetical protein
221	60S ribosomal protein L39	251	similar to auxin-induced protein
222	unknown protein	252	putative protein
		253	putative protein
		254	putative protein
		255	hyuC-like protein

TABLE 1 (cont)

256	putative tetracycline transporter protein	287	unknown protein
257	similar to early nodulins	288	putative esterase D
258	putative protein	289	predicted protein of unknown function
259	putative peptidyl-prolyl cis-trans isomerase	290	unknown protein
260	unknown protein	291	putative indole-3-glycerol phosphate synthase
261	unknown protein	292	isopentenyl pyrophosphate:dimethylallyl pyrophosphate isomerase
262	putative endochitinase	293	kinase associated protein phosphatase
263	putative ABC transporter	294	putative K ⁺ channel, beta subunit
264	No function assigned by TIGR	295	KNAT1 homeobox-like protein
265	CONSTANS-like B-box zinc finger protein	296	PSI type II chlorophyll a/b-binding protein, putative
266	unknown protein	297	transcription factor
267	unknown protein	298	putative WD-40 repeat protein, MSI2
268	putative mitochondrial processing peptidase alpha subunit	299	WD-40 repeat protein (MSI3)
269	putative pre-mRNA splicing factor	300	putative WD-40 repeat protein, MSI4
270	putative phosphatidylserine decarboxylase	301	unknown protein
271	unknown protein	302	hypothetical protein
272	unknown protein	303	putative protein
273	unknown protein	304	No function assigned by TIGR
274	putative casein kinase I	305	polyphosphoinositide binding protein, putative
275	unknown protein	306	hypothetical protein
276	60S ribosomal protein	307	unknown protein
L23A		308	chloroplast ribosomal L1 - like protein
277	putative mitochondrial dicarboxylate carrier protein	309	cold-regulated protein cor15b precursor
278	enoyl-ACP reductase (enr-A)	310	cyanohydrin lyase like protein
279	putative isoamylase	311	putative replication protein A1
280	formamidase - like protein	312	putative protein
281	reticuline oxidase - like protein	313	possible apospory-associated like protein
282	unknown protein	314	DNA binding protein GT-1, putative
283	putative transketolase precursor	315	AT-hook DNA-binding protein (AHP1)
284	putative protein	316	putative phospholipase
285	unknown protein	317	chloroplast FtsH protease, putative
286	unknown protein		

TABLE 1 (cont)

318	enoyl-CoA hydratase like protein	348	putative farnesylated protein
319	berberine bridge enzyme - like protein	349	unknown protein
320	putative sugar transporter	350	water stress-induced protein, putative
321	unknown protein	351	unknown protein
322	No function assigned by TIGR	352	unknown protein
323	hypothetical protein	353	PEROXISOMAL MEMBRANE PROTEIN PMP22
324	putative acidic ribosomal protein	354	putative peroxisomal membrane carrier protein
325	putative protein	355	putative protein
326	unknown protein	356	unknown protein
327	hypothetical protein	357	putative protein
328	putative protein	358	putative protein
329		359	argininosuccinate synthase -like protein
	dihydroxypolypreny	360	1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase
	lbenzoate methyltransferase	361	putative JUN kinase activator protein
330	unknown protein	362	putative 60S ribosomal protein L35
331	myb-related protein	363	nucleoid DNA-binding protein cnd41 - like protein
332	No function assigned by TIGR	364	SigA binding protein
333	putative protein	365	hypothetical protein
334	putative disease resistance response protein	366	putative protein kinase
335	hypothetical protein	367	unknown protein
336	No function assigned by TIGR	368	regulatory protein NPR1-like; transcription factor inhibitor I kappa B-like
337	starch branching enzyme II	369	putative protein
338	No function assigned by TIGR	370	hypothetical protein
339	putative enolase (2-phospho-D-glycerate hydroxylase)	371	phosphoribosylanthranilate isomerase
340	putative protein kinase	372	phosphoribosylanthranilate isomerase
341	HD-Zip protein, putative	373	sterol glucosyltransferase, putative
342	putative protein kinase	374	putative gigantea protein
343	phenylalanyl-trna synthetase - like protein	375	putative MYB family transcription factor
344	putative aconitase	376	hypothetical protein
345	NAM(no apical meristem) protein, putative	377	hypothetical protein
346	unknown protein	378	predicted protein
347	putative phosphomannomutase	379	cytochrome P450, putative

TABLE 1 (cont)

380	putative Na ⁺ dependent ileal bile acid transporter	416	chloroplast precursor (sp Q02166)
381	unknown protein	417	phytochrome C (sp P14714)
382	RING-H2 finger protein RHF1a		putative phytochrome-associated protein 3
383	putative protein	418	receptor serine/threonine kinase PR5K
384	unknown protein	419	Ran-binding protein (atranbp1a)
385	putative protein	420	small Ras-like GTP-binding protein (gb AAB58478.1)
386	putative auxin-regulated protein	421	sterol-C5-desaturase
387	hypothetical protein	422	tryptophan synthase beta chain 1 precursor (sp P14671)
388	unknown protein	423	thioredoxin f2 (gb AAD35004.1)
389	unknown protein	424	No function assigned by TIGR
390	putative protein	425	putative WRKY DNA-binding protein
391	putative protein	426	putative protein
392	unknown protein	427	unknown protein
393	histone H1	428	unknown protein
394	Argonaute (AGO1)-like protein	429	14-3-3 protein homolog RCI1 (pir S47969)
395	unknown protein	430	unknown protein
396	putative protein with C-terminal RING finger	431	putative CCCH-type zinc finger protein
397	unknown protein	432	PINHEAD (gb AAD40098.1); translation initiation factor
398	unknown protein	433	plasma membrane proton ATPase (PMA)
399	unknown protein	434	CHLOROPHYLL A-B BINDING PROTEIN 4 PRECURSOR
400	unknown protein		homolog
401	unknown protein	435	membrane related protein CP5, putative
402	putative copper amine oxidase	436	ABC transporter (AtMRP2)
403	unknown protein	437	putative embryo-abundant protein
404	unknown protein	438	putative anthocyanidin-3-glucoside rhamnosyltransferase
405	unknown protein	439	putative lipid transfer protein
406	putative protein	440	unknown protein
407	putative protein	441	unknown protein
408	unknown protein	442	galactinol synthase, putative
409	unknown protein	443	putative protein
410	putative protein	444	putative protein
411	putative protein	445	SCARECROW-like protein
412	unknown protein	446	unknown protein
413	serine/threonine kinase - like protein		
414	alcohol dehydrogenase, putative		
415	anthranilate phosphoribosyltransferase,		

TABLE 1 (cont)

447	unknown protein	476	phosphoenolpyruvate carboxylase (PPC)
448	unknown protein	477	chlorophyll a/b-binding protein - like
449	unknown protein	478	AtAGP4
450	asparagine--tRNA ligase	479	putative cryptochrome 2 apoprotein
451	putative protein	480	type 2 peroxiredoxin, putative
452	glutamate-1-semialdehyde 2,1-aminomutase 1 precursor (GSA 1) (glutamate-1-semialdehyde aminotransferase 1) (GSA-AT 1) (sp/P42799)	481	Atpm24.1 glutathione S transferase
453	hypothetical protein	482	delta tonoplast integral protein (delta-TIP)
454	putative serine protease-like protein	483	20S proteasome subunit (PAA2)
455	No function assigned by TIGR	484	dormancy-associated protein, putative
456	unknown protein	485	putative cytidine deaminase
457	unknown protein	486	No function assigned by TIGR
458	gamma-adaptin, putative	487	putative phospholipase D-gamma
459	UDP rhamnose--anthocyanidin-3-glucoside rhamnosyltransferase - like protein	488	cell elongation protein, Dwarf1
460	carbonate dehydratase - like protein	489	germin-like protein
461	putative microtubule-associated protein	490	hevein-like protein precursor (PR-4)
462	putative ribophorin I	491	rac-like GTP binding protein (ARAC5)
463	putative zinc finger protein	492	phosphoprotein phosphatase, type 1 catalytic subunit
464	chloroplast FtsH protease, putative	493	ubiquitin-protein ligase UBC9
465	putative protein	494	xyloglucan endotransglycosylase-related protein XTR-7
466	unknown protein	495	cysteine synthase
467	putative LEA protein	496	putative villin 2
468	putative protein	497	glutathione S-transferase
469	putative protein	498	5-adenylylsulfate reductase
470	unknown protein	499	arginine decarboxylase
471	putative purple acid phosphatase	500	ATHP2, putative
472	unknown protein	501	ornithine carbamoyltransferase precursor
473	putative protein	502	putative protein
474	unknown protein	503	putative protein
475	chlorophyll binding protein, putative	504	unknown protein
		505	putative protein
		506	putative protein
		507	unknown protein
		508	unknown protein
		509	unknown protein
		510	unknown protein
		511	hypothetical protein

TABLE 1 (cont)

512	putative protein	552	putative CCCH-type zinc finger protein
513	putative DnaJ protein	553	MAP kinase kinase 2
514	plastocyanin	554	ethylene-insensitive3-like1 (EIL1)
515	unknown protein	555	histidine transport protein (PTR2-B)
516	unknown protein	556	putative auxin-induced protein AUX2-11
517	unknown protein	557	hydroxyacylglutathione hydrolase cytoplasmic (glyoxalase II) (GLX II)
518	unknown protein	558	delta-8 sphingolipid desaturase
519	unknown protein	559	cellulose synthase catalytic subunit (Ath-A)
520	unknown protein	560	nitrate transporter (NTL1)
521	putative ATP-dependent RNA helicase	561	DNA-binding homeotic protein Athb-2
522	non-raee specific disease resistance protein (NDR1)	562	hypothetical protein
523	hypothetical protein	563	aspartate aminotransferase
524	putative protein	564	4-coumarate:CoA ligase 1
525	putative protein	565	pyruvate dehydrogenase E1 beta subunit, putative
526	putative protein	566	nucleotide diphosphate kinase Ia (emb CAB58230.1)
527	copper transport protein	567	chloroplast Cpn21 protein
528	putative protein	568	ATP dependent copper transporter
529	unknown protein	569	very-long-chain fatty acid condensing enzyme (CUT1)
530	unknown protein	570	putative purine-rich single-stranded DNA-binding protein
531	unknown protein	571	serine/threonine protein phosphatase (type 2A)
532	putative protein kinase	572	isopentenyl diphosphate:dimethylallyl diphosphate isomerase (IPP2)
533	unknown protein	573	putative c2h2 zinc finger transcription factor
534	putative protein	574	putative 20S proteasome beta subunit PBC2
535	putative protein	575	nucleoside diphosphate kinase 3 (ndpk3)
536	hypothetical protein	576	ras-related small GTP-binding protein
537	putative protein	577	putative 4-coumarate:CoA ligase 2
538	putative AP2 domain transcription factor		
539	putative nitrilase		
540	putative protein		
541	putative tetrahydrofolate synthase		
542	heat-shock protein		
543	unknown protein		
544	unknown protein		
545	histone H4		
546	hypothetical protein		
547	unknown protein		
548	putative protein		
549	predicted protein		
550	putative dihydrolipoamide succinyltransferase		
551	actin 3		

TABLE 1 (cont)

578	transcription factor HBP-1b	609	photosystem II oxygen-evolving complex protein 3 - like
579	homolog (sp P43273)	610	sedoheptulose-bisphosphatase precursor
580	biotin synthase (Bio B)	611	glutathione S-transferase (GST6)
581	homeobox protein HAT22	612	geranylgeranyl reductase
582	putative preprotein	613	hypothetical protein
583	translocase SECY protein	614	hypothetical protein
584	carbamoylphosphate synthetase, putative	615	phosphoribulokinase precursor
585	putative protein kinase, ADK1	616	high mobility group protein (HMG1), putative
586	putative nuclear DNA-binding protein G2p	617	protease inhibitor II
587	hypothetical protein	618	protease inhibitor II
588	hypothetical protein	619	cytochrome P450 90A1 (sp Q42569)
589	unknown protein	620	unknown protein
590	unknown protein	621	heat shock protein 90
591	molybdopterin synthase (CNX2)	622	tubulin beta-9 chain
592	putative ribosomal protein L6	623	putative ubiquitin carboxyl terminal hydrolase
593	unknown protein	624	protein kinase
594	En/Spm-like transposon protein	625	DRE/CRT-binding protein DREB1C
595	putative protein	626	histidyl-tRNA synthetase
596	putative protein	627	splicing factor, putative
597	unknown protein	628	glutamyl-tRNA synthetase
598	hypothetical protein	629	putative RING zinc finger protein
599	unknown protein	630	phytochelatin synthase (gb AAD41794.1)
600	unknown protein	631	putative C2H2-type zinc finger protein
601	unknown protein	632	putative ligand-gated ion channel protein
602	NifS-like aminotransferase	633	putative ribosomal-protein S6 kinase (ATPK6)
603	actin 8	634	MOLYBDOPTERIN BIOSYNTHESIS CNX1 PROTEIN
604	hypothetical protein	635	temperature-sensitive omega-3 fatty acid desaturase, chloroplast precursor (sp P48622)
605	putative protein	636	adenylosuccinate synthetase
606	heat-shock protein (At-hsc70-3)	637	putative 14-3-3 protein
607	putative protein disulfide isomerase precursor	638	putative cytochrome P450
608	adenosine nucleotide translocator		

TABLE 1 (cont)

639	putative two-component response regulator 3 protein	667	putative receptor-like protein kinase
640	putative RING-H2 zinc finger protein ATL6	668	putative disease resistance protein
641	No function assigned by TIGR	669	receptor-like protein kinase - like
642	small zinc finger-like protein	670	ubiquitin activating enzyme 2 (gb AAB37569.1)
643	hypothetical protein	671	No function assigned by TIGR
644	MAP kinase (ATMPK6)	672	putative receptor-like protein kinase
645	vacuolar ATP synthase, putative	673	K+ transporter, AKT1
646	kinesin-like protein	674	shaggy-like kinase beta
647	serine/threonine-specific protein kinase NAK	675	heat shock protein 70
648	No function assigned by TIGR	676	plasma membrane intrinsic protein 1a
649	ACTIN 2/7 (sp P53492)	677	HSP90-like protein
650	phosphoglycerate kinase, putative	678	histone H1, putative
651	homeotic protein BEL1 homolog	679	unknown protein
652	proline iminopeptidase	680	dnaK-type molecular chaperone hsc70.1 - like
653	pasticcino 1	681	gamma-glutamylcysteine synthetase
654	serine/threonine protein kinase	682	peroxidase (ATP22a)
655	cytochrome P450 monooxygenase (CYP71B4)	683	putative serine carboxypeptidase precursor
656	No function assigned by TIGR	684	putative dioxygenase
657	putative GDSL-motif lipase/hydrolase	685	glucose transporter
658	putative protein	686	NOI protein, nitrate-induced
659	unknown protein	687	putative protein
660	hypothetical protein	688	putative protein
661	putative glycosylation enzyme	689	unknown protein
662	No function assigned by TIGR	690	putative photosystem I reaction center subunit II precursor
663	No function assigned by TIGR	691	putative protein
664	unknown protein	692	unknown protein
665	putative ABC transporter	693	cobalamin biosynthesis protein
666	nifU-like protein	694	adenine nucleotide translocase
		695	glutathione transferase, putative
		696	putative 60S ribosomal protein L21
		697	cytochrome P450 like protein
		698	cytochrome b245 beta chain homolog RbohAp108, putative
		699	RNA helicase, DRH1
		700	putative aldolase
		701	farnesyltransferase subunit A (FTA)

TABLE 1 (cont)

702	No function assigned by	725	putative protein
TIGR		726	NBD-like protein
703	putative putative sister- chromatide cohesion protein	(gb AAD20643.1)	
704	calcium-dependent protein kinase	727	AtHVA22c
705	serine/threonine protein phosphatase type 2A, putative	728	unknown protein
706	40S ribosomal protein S28 (sp P34789)	729	phytoene synthase (gb AAB65697.1)
707	RNA polymerase subunit	730	protein kinase (AME2/AFC1)
708	DNA-damage- repair/toleration protein DRT102	731	hypothetical protein
709	putative C2H2-type zinc finger protein	732	cyclin-dependent protein kinase- like protein
710	putative adenosine phosphosulfate kinase	733	photosystem II stability/assembly factor HCF136 (sp O82660)
711	lipase	734	hypothetical protein
712	putative violaxanthin de- epoxidase precursor (U44133)	735	DNA binding-like protein
713	aromatic rich glycoprotein, putative	736	putative protein
714	putative fumarase	737	chorismate mutase
715	flavonol synthase (FLS) (sp Q96330)	738	putative LRR receptor protein kinase
716	response regulator 5, putative	739	putative chalcone synthase
717	sulfate transporter	740	putative protein kinase
718	putative floral homeotic protein, AGL9	741	replicase, putative
719	putative ethylene-inducible protein	742	putative cysteine proteinase
720	C-8,7 sterol isomerase	743	60S ribosomal protein L36
721	TCH4 protein (gb AAA92363.1)	744	unknown protein
722	hypothetical protein	745	CLC-b chloride channel protein
723	putative urease accessory protein	746	putative ribosomal protein S14
724	molybdopterin synthase sulphurylase (gb AAD18050.1)	747	histone H2B like protein (emb CAA69025.1)
		748	60S ribosomal protein L2
		749	60S ribosomal protein L15 homolog
		750	ribosomal protein S27
		751	ribosomal protein
		752	60S ribosomal protein L12
		753	60s ribosomal protein L34
		754	putative ribosomal protein S10
		755	drought-induced protein like
		756	blue copper-binding protein, 15K (lamin)
		757	calmodulin-like protein
		758	putative protein
		759	No function assigned by TIGR
		760	alpha-mannosidase, putative
		761	uncoupling protein (ucp/PUMP)

TABLE 1 (cont)

762	homeodomain - like protein	786	calcium-dependent protein kinase
763	ribosomal protein S18, putative	(pir S71196)	
764	similar to SOR1 from the fungus <i>Cereospora</i> <i>nicotianae</i>	787	phosphoinositide specific phospholipase C
765	60S ribosomal protein L13, BBC1 protein	788	similarity to S-domain receptor- like protein kinase, <i>Zea mays</i>
766	50S ribosomal protein L24, chloroplast precursor	789	mitosis-specific cyclin 1b
767	putative ribosomal protein	790	4-coumarate:CoA ligase 3
768	unknown protein	791	transcription factor IIB (TFIIB)
769	aspartate aminotransferase (AAT1)	792	unknown protein
770	potassium channel protein AtKC	793	hypothetical protein
771	unknown protein	794	hypothetical protein
772	peroxisomal targeting signal type 2 receptor putative protein	795	sugar transporter like protein
773	putative protein	796	putative trypsin inhibitor
774	Ras-related GTP-binding protein (ARA-4)	797	unknown protein
775	S-receptor kinase homolog 2 precursor	798	putative multispinning membrane protein
776	pathogenesis-related group 5 protein, putative	799	receptor-like kinase, putative
777	Nitrilase 4 (sp P46011)	800	putative inosine-5-monophosphate dehydrogenase
778	biotin carboxyl carrier protein of acetyl-CoA carboxylase precursor (BCCP) (sp Q42533)	801	inosine-5'-monophosphate dehydrogenase, putative
779	photosystem I reaction centre subunit psaN precursor (PSI-N) (sp P49107)	802	amino acid permease 6 (emb CAA65051.1)
780	3(2),5-bisphosphate nucleotidase	803	NADPH-ferrihemoprotein reductase (ATR2)
781	high affinity Ca2+ antiporter	804	putative WRKY-type DNA binding protein
782	putative cytoskeletal protein	805	putative ankyrin
783	putative peroxidase	806	putative hexose transporter
784	respiratory burst oxidase protein	807	aquaporin/MIP - like protein
785	beta-glucosidase	808	Ser/Thr protein kinase isolog
		809	pectate lyase like protein
		810	putative 60S ribosomal protein L17
		811	putative protein
		812	unknown protein
		813	phenylalanine ammonia-lyase
		814	putative cytochrome P450 monooxygenase
		815	ARR1 protein, putative
		816	putative bHLH transcription factor
		817	aminomethyltransferase-like precursor protein
		818	purple acid phosphatase precursor

TABLE 1 (cont)

819	AP2 domain containing protein, putative	844	mercaptopyruvate sulfurtransferase, putative
820	ubiquitin-conjugating enzyme E2-21 kD 1 (ubiquitin-protein ligase 4) (ubiquitin carrier protein 4) (sp P42748)	845	putative thiosulfate sulfurtransferase
821	translation initiation factor	846	dihydrolipoamide S-acetyltransferase
822	putative VAMP-associated protein	847	auxin transport protein REH1, putative
823	spermidine synthase, putative	848	putative auxin transport protein
824	putative protein	849	apyrase (Atapy1)
825	unknown protein	850	root cap 1 (RCP1)
826	AtKAP alpha	851	hypothetical protein
827	glyceraldehyde-3-phosphate dehydrogenase, putative	852	putative protein
828	putative poly(A) binding protein	853	predicted protein of unknown function
829	alpha-tubulin, putative	854	hypothetical protein
830	serine/threonine-specific protein kinase ATPK64 (pir S20918)	855	hypothetical protein
831	putative aspartate-tRNA ligase	856	hypothetical protein
832	ras-related small GTP-binding protein RAB1c	857	putative aldehyde dehydrogenase
833	cycloartenol synthase	858	putative peroxidase
834	No function assigned by TIGR	859	UDP-glucose 4-epimerase - like protein
835	cytochrome P450	860	indole-3-acetate beta-glucosyltransferase like protein
836	GTPase AtRAB8	861	putative beta-1,3-glucanase
837	3-phosphoserine phosphatase	862	disease resistance protein-like
838	transcription factor CRC	863	putative respiratory burst oxidase protein B
839	nuclear cap-binding protein; CBP20 (gb AAD29697.1)	864	ubiquitin-conjugating enzyme UBC3
840	chloroplast membrane protein (ALBINO3)	865	cytoplasmic aconitate hydratase
841	biotin holocarboxylase synthetase	866	NADPH oxidoreductase, putative
842	expansin AtEx6	867	PROTEIN TRANSPORT
843	unknown protein		PROTEIN SEC61 GAMMA SUBUNIT -like
		868	putative protein
		869	unknown protein
		870	60S acidic ribosomal protein P2
		871	No function assigned by TIGR
		872	1,4-alpha-glucan branching enzyme protein soform SBE2.2 precursor
		873	calcium binding protein (CaBP-22)
		874	putative phosphoglucomutase

TABLE 1 (cont)

875	shaggy-like protein kinase etha (EC 2.7.1.-)	901	putative RAS superfamily GTP-binding protein
876	pyruvate decarboxylase (gb AAB16855.1)	902	disease resistance protein-like
877	hypothetical protein	903	protein kinase like protein
878	putative protein kinase	904	glucuronosyl transferase-like protein
879	putative protein kinase	905	putative homeodomain transcription factor
880	putative leucine aminopeptidase	906	putative flavonol reductase
881	probable cytochrome P450	907	putative protein
882	protein kinase 6-like protein	908	salt-tolerance protein
883	arginine methyltransferase (pam1)	909	40S ribosomal protein S30
884	MYB96 transcription factor-like protein	910	putative bZIP transcription factor
885	putative protein	911	putative protein
886	metal ion transporter	912	putative cinnamoyl CoA reductase
887	No function assigned by TIGR	913	unknown protein
888	flax rust resistance protein, putative	914	putative RNA-binding protein
889	fructose-2,6-bisphosphatase, putative	915	phosphatidylinositol synthase (PIS1)
890	exonuclease RRP41	916	unknown protein
891	squamosa promoter binding protein-like 2 (emb CAB56576.1)	917	hydroxyproline-rich glycoprotein homolog
892	putative squamosa-promoter binding protein	918	50S ribosomal protein L15, chloroplast precursor
893	O-acetylserine(thiol) lyase, putative	919	unknown protein
894	snoRNA	920	putative YME1 ATP-dependant protease
895	snoRNA	921	unknown protein
896	ferredoxin-NADP+ reductase	922	putative ribosomal protein L28
897	H+-transporting ATP synthase chain 9 - like protein	923	unknown protein
898	photosystem I subunit III precursor, putative	924	putative protein
899	photosystem I subunit VI precursor	925	protein ch-42 precursor, chloroplast
900	auxin-binding protein 1 precursor	926	protein serine/threonine kinase, putative
		927	beta-VPE
		928	putative vacuolar sorting receptor
		929	putative translation initiation factor IF-2
		930	predicted protein of unknown function
		931	putative protein
		932	hypothetical protein
		933	hypothetical protein
		934	phosphate transporter, putative

TABLE 1 (cont)

935	No function assigned by TIGR	961	unknown protein
936	beta subunit of protein farnesyl transferase ERA1	962	unknown protein
937	putative glutamate decarboxylase	963	unknown protein
938	putative indole-3-acetate beta-glucosyltransferase	964	myosinase-associated protein, putative
939	putative receptor-like protein kinase	965	hypothetical protein
940	UDP-galactose 4-epimerase-like protein	966	hypothetical protein
941	putative proliferating cell nuclear antigen, PCNA	967	No function assigned by TIGR
942	ubiquitin conjugating enzyme E2 (UBC13)	968	unknown protein
943	cyclophilin (CYP2)	969	hypothetical protein
944	cystatin (emb CAA03929.1)	970	LAX1 / AUX1 -like permease
945	putative alcohol dehydrogenase	971	putative UDP-N-acetylglucosamine--dolichyl-phosphate N-acetylglucosaminophosphotransferase
946	acidic ribosomal protein p1	972	chorismate mutase CM2
947	glutathione transferase AtGST 10 (emb CAA10457.1)	973	inner mitochondrial membrane protein
948	putative tropinone reductase	974	DEF (CLA1) protein
949	ZIP4, a putative zinc transporter	975	decoy
950	unknown protein	976	citrate synthase
951	putative protein	977	myosin
952	putative protein	978	40S ribosomal protein S19
953	putative C2H2-type zinc finger protein	979	ripening-related protein - like
954	putative RING zinc finger protein	980	putative signal peptidase I
955	putative microtubule-associated protein	981	methionyl-tRNA synthetase (AtcpMetRS)
956	unknown protein	982	ribosomal protein precursor - like
957	putative protein	983	50S ribosomal protein L21
958	putative protein phosphatase-2c	984	chloroplast precursor (CL21)
959	V-ATPase subunit G (vag2 gene)	984	putative MYB family transcription factor
960	hypothetical protein	985	cyclophilin - like protein
		986	hypothetical protein
		987	naringenin 3-dioxygenase like protein
		988	WD-repeat protein -like protein
		989	putative serine carboxypeptidase II
		990	prenyltransferase, putative
		991	putative ligand-gated ion channel protein
		992	clathrin adaptor medium chain protein MU1B, putative
		993	No function assigned by TIGR

TABLE 1 (cont)

994	putative Ta11-like non-LTR retroelement protein	1025	putative tropinone reductase
995	putative 3-isopropylmalate dehydrogenase	1026	signal response protein (GAI)
996	3-isopropylmalate dehydratase, small subunit	1027	putative steroid sulfotransferase
997	unknown protein	1028	hypothetical protein
998	unknown protein	1029	nucleic acid binding protein - like
999	unknown protein	1030	putative protein
1000	hypothetical protein	1031	blue copper binding protein
1001	putative protein	1032	farnesylated protein (ATFP6)
1002	No function assigned by TIGR	1033	unknown protein
1003	putative beta-glucosidase	1034	putative PCF2-like DNA binding protein
1004	putative pectate lyase A11	1035	teosinte branched1 - like protein
1005	putative beta-glucosidase	1036	putative protein
1006	HD-Zip protein	1037	unknown protein
1007	putative ubiquitin conjugating enzyme	1038	unknown protein
1008	homeobox-leucine zipper protein-like	1039	2-oxoglutarate dehydrogenase, E1 component
1009	cytochrome P450 like protein	1040	unknown protein
1010	putative cysteine proteinase inhibitor B (cystatin B)	1041	unknown protein
1011	ethylene response sensor (ERS)	1042	CCAAT-binding transcription factor subunit A(CBF-A)
1012	putative SWH1 protein	1043	hypothetical protein
1013	putative glutathione S-transferase	1044	putative growth regulator protein
1014	putative protein	1045	putative presenilin
1015	unknown protein	1046	putative expansin
1016	putative protein phosphatase 2C	1047	ribosomal - like protein
1017	dnaJ protein homolog atj3	1048	unknown protein
1018	ferredoxin	1049	unknown protein
1019	hypothetical protein	1050	putative protein
1020	putative sugar transport protein, ERD6	1051	putative protein
1021	putative DnaJ protein	1052	unknown protein
1022	putative AP2 domain transcription factor	1053	unknown protein
1023	putative protein	1054	unknown protein
1024	putative cyclin-dependent kinase regulatory subunit	1055	unknown protein
		1056	unknown protein
		1057	putative protein
		1058	putative protein
		1059	argininosuccinate lyase (AtArgH)
		1060	disease resistance protein homolog
		1061	aldehyde dehydrogenase like protein
		1062	GBF2, G-box binding factor
		1063	CDPK-related kinase
		1064	endo-1,4-beta-glucanase
		1065	putative serine protease

TABLE 1 (cont)

1066	serine/threonine-specific kinase lecRK1 precursor, lectin receptor-like	1091	putative ATP-dependent RNA helicase
1067	putative MAP kinase	1092	putative protein
1068	RNase L inhibitor-like protein	1093	putative HMG protein
1069	No function assigned by TIGR	1094	squalene monooxygenase 2 (squalene epoxidase 2) (SE 2) (sp O65403)
1070	AP2 domain transcription factor	1095	eukaryotic peptide chain release factor subunit 1, putative
1071	polygalacturonase isoenzyme 1 beta subunit, putative	1096	auxin-induced protein - like
1072	putative lipid transfer protein	1097	putative lipamide dehydrogenase
1073	putative protein kinase	1098	putative protein
1074	putative protein	1099	unknown protein
1075	ATP-dependent RNA helicase like protein	1100	putative oligopeptide transporter
1076	putative cyclic nucleotide-regulated ion channel protein	1101	putative translation elongation factor ts
1077	COP1 like protein	1102	putative CCAAT-binding transcription factor subunit
1078	putative peroxidase	1103	putative ABC transporter
1079	putative NAK-like ser/thr protein kinase	1104	putative superoxide-generating NADPH oxidase flavocytochrome
1080	putative cytochrome C	1105	aspartate kinase-homoserine dehydrogenase - like protein
1081	cytochrome c	1106	putative bHLH transcription factor
1082	putative serine carboxypeptidase II	1107	putative geranylgeranyl transferase type I beta subunit
1083	acyl-(acyl carrier protein) thioesterase	1108	putative ARP2/3 protein complex subunit p41
1084	DNA-binding factor, putative	1109	sulphite reductase
1085	MAP3K delta-1 protein kinase	1110	putative auxin-regulated protein
1086	AtMlo-h1-like protein	1111	transcription factor scarecrow-like 14, putative
1087	No function assigned by TIGR	1112	unknown protein
1088	putative expansin	1113	monooxygenase 2 (MO2)
1089	defender against cell death protein, putative	1114	putative amine oxidase
1090	glycolate oxidase - like protein	1115	zinc finger protein, putative
		1116	DNA-binding protein, putative
		1117	putative protein
		1118	putative protein
		1119	Avr9 elicitor response like protein
		1120	putative protein
		1121	hypothetical protein
		1122	putative nucleotide-sugar dehydratase
		1123	UFD1 like protein

TABLE 1 (cont)

1124	putative trans-prenyltransferase	1155	cytochrome c oxidoreductase like protein
1125	outward rectifying potassium channel KCO	1156	putative carboxymethylenebutenolidase
1126	unknown protein	1157	unknown protein
1127	putative pectinacetylesterase	1158	unknown protein
1128	putative protein	1159	unknown protein
1129	No function assigned by TIGR	1160	unknown protein
1130	unknown protein	1161	unknown protein
1131	unknown protein	1162	unknown protein
1132	unknown protein	1163	auxin-induced protein (IAA20)
1133	protein phosphatase homolog (PPH1)	1164	50S ribosomal protein L4
1134	unknown protein	1165	putative DNA topoisomerase III beta
1135	No function assigned by TIGR	1166	No function assigned by TIGR
1136	unknown protein	1167	isp4 like protein
1137	unknown protein	1168	putative protein kinase
1138	unknown protein	1169	hypothetical protein
1139	putative protein	1170	putative pyrophosphate--fructose-6-phosphate 1-phosphotransferase
1140	unknown protein	1171	putative protein
1141	putative ubiquinol--cytochrome-c reductase	1172	putative protein
1142	unknown protein	1173	putative protein
1143	contains similarity to high-glucose-regulated protein 8 GB:AAF08813 GI:6449083 from [Homo sapiens]	1174	unknown protein
1144	unknown protein	1175	unknown protein
1145	putative cis-Golgi SNARE protein	1176	putative protein
1146	unknown protein	1177	putative protein
1147	glutamate-1-semialdehyde aminotransferase	1178	unknown protein
1148	No function assigned by TIGR	1179	unknown protein
1149	hypothetical protein	1180	putative protein
1150	unknown protein	1181	brassinosteroid insensitive 1 gene (BRI1)
1151	unknown protein	1182	putative receptor protein kinase
1152	unknown protein	1183	vacuolar-type H ⁺ -translocating inorganic pyrophosphatase
1153	scarecrow-like 3	1184	protein kinase - like protein
1154	putative proline-rich protein	1185	glycyl tRNA synthetase, putative
		1186	subtilisin proteinase - like
		1187	hypothetical protein
		1188	cytochrome P450-like protein
		1189	cytochrome p450 like protein
		1190	putative protein kinase
		1191	pectinesterase - like protein
		1192	putative receptor-like protein kinase

TABLE 1 (cont)

1193	peroxidase ATP17a-like protein	1219	putative AP2 domain transcription factor
1194	No function assigned by TIGR	1220	brassinosteroid receptor kinase, putative
1195	cellulose synthase catalytic subunit - like protein	1221	TINY-like protein
1196	RAS-related protein, RAB7	1222	glucose-6-phosphate isomerase
1197	putative aspartate aminotransferase	1223	putative protein
1198	cyclophilin	1224	putative NAM (no apical meristem)-like protein
1199	putative SF2/ASF splicing modulator, Srp30	1225	unknown protein
1200	putative cytochrome b5	1226	putative nucleotide-binding protein
1201	glutamyl-tRNA reductase, putative	1227	bZIP transcription factor (POSF21)
1202	putative MADS-box protein	1228	ubiquitin activating enzyme - like protein
1203	ammonium transport protein (AMT1)	1229	telomere repeat-binding protein
1204	No function assigned by TIGR	1230	unknown protein
1205	putative beta-ketoacyl-CoA synthase	1231	mevalonate kinase
1206	thaumatin-like protein	1232	putative protein
1207	putative methionine aminopeptidase	1233	hypothetical protein
1208	putative protein phosphatase 2C	1234	disease resistance RPP5 like protein
1209	kinase-like protein	1235	putative protein
1210	receptor-associated kinase isolog	1236	putative pectinesterase
1211	mitochondrial ribosomal protein S14	1237	Tig1 protein (emb CAB45372.1)
1212	oleosin, 18.5K	1238	FUSCA PROTEIN FUS6
1213	chalcone isomerase	1239	NHE1 Na ⁺ /H ⁺ exchanger
1214	putative cyclin-dependent kinase regulatory subunit	1240	No function assigned by TIGR
1215	putative thaumatin-like protein	1241	Phospholipase like protein
1216	putative two-component response regulator protein	1242	unknown protein
1217	TATA binding protein-associated factor, putative	1243	unknown protein
1218	predicted protein of unknown function	1244	unknown protein
		1245	AUX1-like amino acid permease
		1246	unknown protein
		1247	putative C2H2-type zinc finger protein
		1248	putative protein
		1249	putative protein
		1250	putative glucosyltransferase
		1251	putative lipase
		1252	putative protein
		1253	putative thioredoxin
		1254	AIG2-like protein
		1255	short-chain alcohol dehydrogenase like protein
		1256	hypothetical protein

TABLE 1 (cont)

1257	putative protein	1287	No function assigned by TIGR
1258	putative protein	1288	serine/threonine protein kinase
1259	glutathione peroxidase - like protein	ATPK10	
1260	putative protein	1289	putative lipase
1261	putative disease resistance response protein	1290	choline kinase GmCK2p -like protein
1262	putative protein	1291	putative sugar transport protein, ERD6
1263	senescence-associated protein (SAG29)	1292	MYB27 protein - like
1264	glycolate oxidase, putative	1293	DNA-binding protein, putative
1265	extensin - like protein	1294	similar to cold acclimation protein WCOR413 [Triticum aestivum]
1266	putative protein	1295	unknown protein
1267	unknown protein	1296	aquaporin (plasma membrane intrinsic protein 2B)
1268	putative disease resistance protein	1297	No function assigned by TIGR
1269	putative receptor-like protein kinase	1298	P-Protein - like protein
1270	putative receptor-like protein kinase	1299	No function assigned by TIGR
1271	basic ehitinase	1300	putative cytochrome P450 monooxygenase
1272	putative pectin methylsterase	1301	putative cytochrome P450 monooxygenase
1273	peroxidase ATP N	1302	putative thioredoxin
1274	class 2 non-symbiotic hemoglobin	1303	stromal ascorbate peroxidase
1275	nitrate transporter	1304	ethylene responsive element binding factor-like protein (AtERF6)
1276	Ca ²⁺ /H ⁺ -exchanging protein-like	1305	auxin transport protein EIR1 (gb AAC39513.1)
1277	putative protein	1306	putative CONSTANS-like B-box zinc finger protein
1278	hydroxynitrile lyase like protein	1307	putative protein kinase
1279	putative AP2 domain transcription factor	1308	mitochondrial Lon protease homolog 1 precursor (sp O64948)
1280	pectin methylsterase, putative	1309	putative protein
1281	putative protein	1310	heme activated protein, putative
1282	beta-glucosidase-like protein	1311	putative cytochrome P450
1283	CCAAT box binding factor/ transcription factor Hap2a	1312	No function assigned by TIGR
1284	putative fibrillin	1313	putative lipase
1285	xyloglucan endo- transglycosylase	1314	putative protein
1286	putative 10kd chaperonin	1315	putative sugar transporter protein
		1316	putative sucrose transport protein, SUC2
		1317	putative protein
		1318	putative protein

TABLE 1 (cont)

1319	putative endochitinase	1351	unknown protein
1320	putative acetone- cyanohydrin lyase	1352	bZIP transcription factor - like protein
1321	putative protein	1353	Medicago nodulin N21-like protein
1322	calmodulin-like protein	1354	putative endo-1,4-beta glucanase
1323	hypothetical protein	1355	1-aminocyclopropane-1- earboxylate oxidase
1324	cysteine proteinase like protein	1356	putative anion exchange protein
1325	heat shock protein 17.6-II	1357	SRG1-like protein
1326	heat shock protein 18	1358	putative protein
1327	Arabidopsis mitochondrion- localized small heat shock protein (AtHSP23.6-mito)	1359	putative phi-1-like phosphate- indueed protein
1328	unknown protein	1360	putative protein
1329	putative WRKY-type DNA binding protein	1361	putative embryo-abundant protein
1330	No function assigned by TIGR	1362	putative hydrolase
1331	hypothetical protein	1363	unknown protein
1332	putative integral membrane protein nodulin	1364	unknown protein
1333	putative protein	1365	hexose transporter - like protein
1334	unknown protein	1366	unknown protein
1335	3-isopropylmalate dehydratase, small subunit	1367	unknown protein
1336	unknown protein	1368	peptide transport - like protein
1337	putative homeodomain transcription factor	1369	unknown protein
1338	unknown protein	1370	putative peptide transporter
1339	putative protein	1371	disease resistance protein, putative
1340	peroxidase ATP19a	1372	cysteine protease component of protease-inhibitor complex
1341	putative Na ⁺ /H ⁺ - exchanging protein	1373	putative cytochrome P450
1342	putative auxin-regulated protein	1374	putative protein
1343	unknown protein	1375	hypothetical protein
1344	unknown protein	1376	unknown protein
1345	putative trehalose-6- phosphate synthase	1377	putative phosphoribosylaminoimidazolecar boxamide formyltransferase
1346	putative lectin	1378	putative protein
1347	Mlo protein-like	1379	HSP like protein
1348	unknown protein	1380	unknown protein
1349	ethylene response factor, putative	1381	unknown protein
1350	unknown protein	1382	putative cytochrome P450
		1383	similar to pectinesterase
		1384	putative glucosyltransferase
		1385	thaumatin-like protein
		1386	drought-inducible cysteine proteinase RD19A precursor
		1387	vegetative storage protein Vsp2
		1388	unknown protein

TABLE 1 (cont)

1389	unknown protein	1417	G-box binding bZIP transcription factor
1390	anthranilate N-benzoyltransferase - like protein	1418	putative protein
1391	delta-1-pyrroline 5-carboxylase synthetase (P5C1)	1419	putative protein
1392	glutathione S-conjugate transporting ATPase (AtMRP1)	1420	putative protein
1393	hypothetical protein	1421	ATFP4-like
1394	hypothetical protein	1422	unknown protein
1395	unknown protein	1423	unknown protein
1396	putative protein	1424	putative protein
1397	putative protein	1425	invertase inhibitor homolog (emb)CAA73335.1)
1398	No function assigned by TIGR	1426	unknown protein
1399	unknown protein	1427	unknown protein
1400	putative protein kinase	1428	putative cytochrome b5
1401	unknown protein	1429	putative protein
1402	hypothetical protein	1430	putative protein
1403	unknown protein	1431	putative protein
1404	putative calcium-binding EF-hand protein	1432	No function assigned by TIGR
1405	cinnamyl-alcohol dehydrogenase ELI3-1	1433	putative copper/zinc superoxide dismutase
1406	putative protein	1434	protein phosphatase AB11
1407	unknown protein	1435	glutamate dehydrogenase 2
1408	senescence-associated protein sen1	1436	No function assigned by TIGR
1409	hypothetical protein	1437	low-temperature-induced protein 78 (sp Q06738)
1410	putative cytochrome P450	1438	putative myo-inositol 1-phosphate synthase
1411	proline oxidase, mitochondrial precursor (osmotic stress-induced proline dehydrogenase)	1439	phosphate transporter (gb AAB17265.1)
1412	putative response regulator 3	1440	4-hydroxyphenylpyruvate dioxygenase (HPD)
1413	hypothetical protein	1441	histone H1
1414	glutamine-dependent asparagine synthetase	1442	hypothetical protein
1415	lysine-ketoglutarate reductase/saccharopine	1443	No function assigned by TIGR
1416	En/Spm-like transposon protein	1444	neoxanthin cleavage enzyme-like protein
		1445	dehydration-induced protein RD22
		1446	zinc finger protein ZAT7
		1447	unknown protein
		1448	unknown protein
		1449	unknown protein
		1450	unknown protein
		1451	putative protein
		1452	putative protein
		1453	RNA helicase, putative

TABLE 1 (cont)

1454	putative glycine-rich protein	1483	unknown protein
1455	hypothetical protein	1484	eold and ABA inducible protein kin1
1456	putative protein	1485	gamma-VPE (vacuolar processing enzyme)
1457	peroxidase	1486	putative protein 1 photosystem II oxygen-evolving complex
1458	peroxidase ATP3a (emb)CAA67340.1)	1487	myrosinase-associated protein, putative
1459	metallothionein-like protein	1488	transcription factor ATMYB4
1460	endomembrane-associated protein	1489	H-protein promoter binding factor-2a
1461	ferritin 1 precursor	1490	ammonium transporter, putative
1462	dehydrin RAB18-like protein (sp)P30185)	1491	putative zeta-carotene desaturase precursor
1463	HSR201 like protein	1492	high-affinity nitrate transporter NRT2
1464	light regulated protein, putative	1493	light induced protein like
1465	Dr4(protease inhibitor)	1494	putative AT-hook DNA-binding protein
1466	mitogen activated protein kinase kinase (nMAPKK)	1495	putative glycogenin
1467	glutathione S-transferase	1496	putative light repressible receptor protein kinase
1468	transcriptional activator CBF1/ CRT/CRE binding factor 1	1497	serine/threonine kinase - like protein
1469	homeobox-leucine zipper protein ATHB-12	1498	putative peroxidase
1470	amino acid permease I	1499	cytochrome P450 monooxygenase (CYP83A1)
1471	MAP kinase (ATMPK7)	1500	MYB-related transcription factor (CCA1)
1472	potassium channel protein AKT3	1501	Terminal flower1 (TFL1)
1473	cytochrome P450 monooxygenase (CYP91A2)	1502	sulfate transporter ATST1
1474	putative transport protein	1503	RING-H2 finger protein RHA3b
1475	putative protein	1504	lipoxygenase, putative
1476	hypothetical protein	1505	serine O-acetyltransferase (EC 2.3.1.30) Sat-52 (pir)S71207)
1477	putative protein	1506	ferulate-5-hydroxylase (FAH1)
1478	hypothetical protein	1507	En/Spm-like transposon protein, putative
1479	receptor protein kinase-like protein	1508	calmodulin-binding - like protein
1480	serine/threonine protein kinase - like protein	1509	hypothetical protein
1481	putative auxin-regulated protein	1510	somatic embryogenesis receptor-like kinase -like protein
1482	amino acid transport protein AAP2	1511	putative gibberellin beta-hydroxylase

TABLE 1 (cont)

1512	putative pectinesterase	1542	60S acidic ribosomal protein P0
1513	putative protein	1543	putative protein
1514	unknown protein	1544	auxin-induced protein, putative
1515	ribosomal protein	1545	unknown protein
1516	low-temperature-induced 65 kD protein (sp Q04980)	1546	hypothetical protein
1517	putative glucosyltransferase	1547	protein phosphatase 2C ABI2 (PP2C) (sp O04719)
1518	peroxidase (emb CAA67551.1)	1548	peroxidase, prxr2
1519	ankyrin-like protein	1549	putative peroxidase ATP12a
1520	ribosomal protein S11 - like	1550	putative beta-amylase
1521	hypothetical protein	1551	putative acetone-cyanohydrin lyase
1522	glycoprotein(EP1), putative	1552	fatty acid elongase 3-ketoacyl-CoA synthase 1
1523	calnexin - like protein	1553	putative citrate synthase
1524	SRG1-like protein	1554	pEARL1 1-like protein
1525	ethylene response factor 1 (ERF1)	1555	putative MYB family transcription factor
1526	transcriptional activator CBF1-like protein	1556	putative transcription factor MYB28
1527	xyloglucan endo-1,4-beta- D-glucanase (XTR-6)	1557	RNA helicase-like protein
1528	putative cinnamyl alcohol dehydrogenase	1558	snoRNA
1529	gibberellin 3 beta- hydroxylase, putative	1559	putative protein kinase
1530	auxin response transcription factor 3 (ETTIN/ARF3)	1560	growth regulator like protein
1531	No function assigned by TIGR	1561	putative potassium transporter
1532	putative protein	1562	putative protein
1533	similar to avrRpt2-induced protein 1	1563	60S ribosomal protein L14
1534	unknown protein	1564	unknown protein
1535	hypothetical protein	1565	putative RING-H2 zinc finger protein
1536	putative protein kinase	1566	putative pollen surface protein
1537	respiratory burst oxidase - like protein	1567	unknown protein
1538	glucose-6- phosphate/phosphate- translocator precursor, putative	1568	unknown protein
1539	class 1 non-symbiotic hemoglobin (AHB1)	1569	unknown protein
1540	endochitinase isolog	1570	putative Ca ²⁺ -ATPase
1541	putative cytochrome P450	1571	1-aminocyclopropane-1- carboxylate synthase -like protein
		1572	putative beta-glucosidase
		1573	transcription factor ZAP1
		1574	oligopeptide transporter, putative
		1575	putative protein
		1576	putative glucosyltransferase
		1577	putative serine/threonine kinase
		1578	squalene epoxidase - like protein
		1579	similar to 14KD proline-rich protein DC2.15 precursor

TABLE 1 (cont)

	(sp P14009); similar to	1612	DnaJ-like protein
	ESTs emb Z17709 and	1613	putative inositol polyphosphate-5-
	emb Z47685		phosphatase
1580	unknown protein	1614	putative cytochrome P450
1581	unknown protein	1615	putative protein
1582	hypothetical protein	1616	unknown protein
1583	60S ribosomal protein L38	1617	putative protein
1584	flavin-containing	1618	hypothetical protein
	monooxygenase, putative	1619	putative protein
1585	remorin	1620	sucrose-UDP glucosyltransferase
1586	unknown protein	1621	glucose-6-phosphate 1-
1587	putative protein		dehydrogenase
1588	lipoxygenase	1622	unknown protein
1589	cold-regulated protein	1623	mitochondrial chaperonin (HSP60)
	COR6.6 (KIN2)	1624	sucrose transport protein SUC1
1590	Myb transcription factor	1625	putative protein disulfide isomerase
	homolog (ATR1)	1626	putative pollen-specific protein
1591	putative protein	1627	integral membrane protein,
1592	unknown protein		putative
1593	unknown protein	1628	rubredoxin, putative
1594	Ca ²⁺ -transporting ATPase	1629	putative protein
	- like protein	1630	disease resistance protein RPS4,
1595	protein phosphatase 2C		putative
	(AtP2C-HA)	1631	putative peptide/amino acid
1596	peroxidase ATP24a		transporter
1597	branched-chain alpha keto-	1632	peroxidase, putative
	acid dehydrogenase,	1633	ethylene receptor, putative (ETR2)
	putative	1634	protein phosphatase 2C (PP2C)
1598	putative beta-ketoacyl-CoA	1635	putative glutathione S-transferase
	synthase	1636	homeodomain transcription factor
1599	putative protein		(ATHB-7)
1600	putative beta-galactosidase	1637	putative nitrate transporter
1601	putative protein	1638	putative ribosomal protein L9,
1602	60S ribosomal protein L27		cytosolic
1603	putative annexin	1639	putative DNA-binding protein
1604	NAC domain protein,	1640	beta-1,3-glucanase-like protein
	putative	1641	putative zinc transporter
1605	unknown protein	1642	transcription factor TINY
1606	late embryogenesis	1643	putative aspartate kinase-
	abundant protein LEA like		homoserine dehydrogenase
1607	unknown protein	1644	ethylene reponse factor-like AP2
1608	putative protein		domain transcription factor
1609	dehydrin Xero2	1645	peptide transporter - like protein
1610	putative zinc finger protein	1646	trehalose-6-phosphate synthase like
1611	unknown protein		protein

TABLE 1 (cont)

1647	putative ribonuclease	1676	pathogenesis-related protein 1 precursor, 19.3K
1648	hypothetical protein	1677	R2R3-MYB transcription factor
1649	putative DNA-binding protein	1678	hypothetical protein
1650	nodulin-like protein	1679	putative chitinase
1651	trehalose-6-phosphate phosphatase - like protein	1680	Mlo protein, putative
1652	succinate dehydrogenase flavoprotein alpha subunit (emb CAA05025.1)	1681	putative WRKY-type DNA binding protein
1653	unknown protein	1682	putative acyl-CoA synthetase
1654	stress related protein, putative	1683	putative pathogenesis-related protein
1655	putative chloroplast initiation factor 3	1684	putative chitinase
1656	putative protein	1685	germin precursor oxalate oxidase
1657	hypothetical protein	1686	endoxyloglucan transferase, putative
1658	putative CCH-type zinc finger protein	1687	putative protein
1659	similar to harpin-induced protein hin1 from tobacco	1688	putative cytochrome P450
1660	unknown protein	1689	similar to Mlo proteins from H. vulgare
1661	unknown protein	1690	putative tropinone reductase
1662	hypothetical protein	1691	extensin-like protein
1663	No function assigned by TIGR	1692	putative sarcosine oxidase
1664	putative protein	1693	putative protein
1665	putative glutathione S-transferase TSI-1	1694	hypothetical protein
1666	putative protein	1695	late embryogenesis-abundant protein, putative
1667	putative PTR2 family peptide transporter	1696	beta-carotene hydroxylase
1668	receptor kinase-like protein	1697	putative calcium binding protein
1669	putative sugar transport protein, ERD6	1698	unknown protein
1670	putative protein	1699	unknown protein
1671	nodulin-like protein	1700	predicted glycosyl transferase
1672	unknown protein	1701	hypothetical protein
1673	putative receptor-like protein kinase	1702	hypothetical protein
1674	glutathione-conjugate transporter AtMRP4	1703	hypothetical protein
1675	ascorbate oxidase-like protein	1704	putative protein
		1705	unknown protein
		1706	putative protein
		1707	putative protein
		1708	serine/threonine kinase - like protein
		1709	No function assigned by TIGR
		1710	putative pectinesterase
		1711	peroxidase like protein
		1712	No function assigned by TIGR

TABLE 1 (cont)

1713	phenylalanine ammonia lyase (PAL)		Coenzyme A 3-O-methyltransferase
1714	peroxidase (emb CAA68212.1)	1740	disease resistance protein EDS1
1715	putative AMP deaminase	1741	putative protein kinase
1716	putative MYB family transcription factor	1742	Glutathione reductase, chloroplast precursor
1717	DNA-directed RNA polymerase II, third largest subunit	1743	putative heat shock protein
1718	nucleotide pyrophosphatase-like protein	1744	aspartate kinase
1719	putative peroxidase	1745	putative major intrinsic (channel) protein
1720	calcium sensor homolog (gb AAC26110.1)	1746	matrix metalloproteinase, putative
1721	putative GDSL-motif lipase/hydrolase	1747	putative GDSL-motif lipase/hydrolase
1722	putative nonspecific lipid-transfer protein	1748	putative protein
1723	acyl-carrier protein (ACP), putative	1749	DAG-like protein
1724	putative glycine dehydrogenase	1750	serine/threonine kinase -like protein
1725	AIG1	1751	formamidase - like protein
1726	ACC synthase (AtACS-6)	1752	CER2
1727	cyclin delta-3	1753	26S proteasome subunit 4
1728	putative RING zinc finger protein	1754	pectinesterase like protein
1729	aldose 1-epimerase - like protein	1755	putative disease resistance protein
1730	putative phospholipase	1756	putative RNA methyltransferase
1731	phosphoenolpyruvate carboxylase	1757	unknown protein
1732	putative galactinol synthase	1758	HOMEBOX PROTEIN
1733	unknown protein		KNOTTED-1 LIKE 4 (KNAT4)
1734	putative protein	1759	glycine-rich RNA-binding protein
1735	1-aminocyclopropane-1-carboxylate oxidase		AtGRP2 - like
1736	thioredoxin (clone GIF1) (pir S58118)	1760	putative acetylmethine transaminase
1737	trehalose-6-phosphate phosphatase	1761	putative Sec24-like COPII protein
1738	beta-1,3-glucanase 2 (BG2) (PR-2)	1762	putative berberine bridge enzyme
1739	putative S-adenosyl-L-methionine:trans-caffeoyl-	1763	putative GH3-like protein
		1764	putative ABC transporter
		1765	putative reticuline oxidase-like protein
		1766	pectate lyase - like protein
		1767	protein disulfide-isomerase-like protein
		1768	putative protein
		1769	putative membrane transporter
		1770	unknown protein
		1771	unknown protein
		1772	putative RING-H2 zinc finger protein

TABLE 1 (cont)

1773	unknown protein	1807	glycine-rich RNA binding protein
1774	unknown protein	7	
1775	unknown protein	1808	dehydrin, putative
1776	MADS-box protein	1809	putative endoxylglucan
(AGL20)			glycosyltransferase
1777	amidophosphoribosyltransf	1810	glutamate decarboxylase 1 (GAD
erase 2 precursor		1) (spQ42521)	
1778	putative dihydrodipicolinate	1811	delta 9 desaturase
synthase		1812	UDP-glucose glycosyltransferase
1779	hypothetical protein	1813	CARBONIC ANHYDRASE 2
1780	ABA-responsive protein -	1814	response reactor 2 (ATRR2)
like		1815	S-adenosyl-methionine-sterol-C-
1781	putative protein		methyltransferase, putative
1782	hypothetical protein	1816	putative DNA-binding protein
1783	DNA-binding protein-like	(RAV2-like)	
1784	No function assigned by	1817	gamma glutamyl hydrolase,
TIGR			putative
1785	transcription factor,	1818	protein phosphatase - like
putative		1819	unknown protein
1786	nitrate reductase, putative	1820	unknown protein
1787	putative protein	1821	unknown protein
1788	putative protein	1822	copper transport protein - like
1789	putative protein		protein
1790	putative protein	1823	hypothetical protein
1791	unknown protein	1824	unknown protein
1792	unknown protein	1825	putative peptide methionine
1793	tryptophan synthase beta-		sulfoxide reductase
subunit (TSB2)		1826	putative obtusifolios 14-alpha
1794	hypothetical protein		demethylase
1795	putative protein	1827	glutamate dehydrogenase (EC
1796	putative DNA-binding	1.4.1.-) 1 (pir S71217)	
protein		1828	unknown protein
1797	putative 40S ribosomal	1829	xyloglucan endo-1,4-beta-D-
protein S10			glucanase precursor
1798	putative protein	1830	unknown protein
1799	putative cytochrome P450	1831	SNF1 related protein kinase
1800	putative protein	(ATSRPK1)	
1801	putative protein	1832	putative protein
1802	putative glycosyltransferase	1833	putative chloroplast nucleoid DNA
1803	No function assigned by		binding protein
TIGR		1834	hypothetical protein
1804	putative protein	1835	putative protein
1805	putative protein	1836	putative thiamin biosynthesis
1806	unknown protein	protein	
		1837	unknown protein

TABLE 1 (cont)

1838	unknown protein	1869	putative tyrosine aminotransferase
1839	putative RNA helicase	1870	thionin
1840	putative SF21 protein { <i>Helianthus annuus</i> }	1871	No function assigned by TIGR
1841	unknown protein	1872	APETALA2 protein
1842	NBS/LRR disease resistance protein, putative	1873	MADS-box protein (AGL3)
1843	hypothetical protein	1874	putative monooxygenase
1844	unknown protein	1875	ZFP3 zinc finger protein
1845	No function assigned by TIGR	1876	cell division protein FtsZ chloroplast homolog precursor (sp Q42545)
1846	glycine-rich protein (AtGRP2)	1877	calreticulin, putative
1847	No function assigned by TIGR	1878	phosphoserine aminotransferase
1848	putative protein	1879	12-oxophytodienoate-10,11- reductase
1849	putative glucosyltransferase	1880	putative bHLH transcription factor
1850	hypothetical protein	1881	pectin methylesterase (PMEU1), putative
1851	hypothetical protein	1882	DNA-binding protein
1852	putative protein	1883	carnitine racemase like protein
1853	putative disease resistance protein	1884	putative protein
1854	thaumatin, putative	1885	endoxylglucan transferase (dbj BAA81669.1)
1855	putative proline-rich protein	1886	RMA1 RING zinc finger protein
1856	sterol-C-methyltransferase	1887	ammonium transporter
1857	superoxidase dismutase	1888	apyrase (gb AAF00612.1)
1858	TINY-like protein	1889	potassium uptake transporter - like protein
1859	calcium-dependent protein kinase, putative	1890	putative ABC transporter
1860	hypothetical protein	1891	potassium transporter-like protein
1861	putative protein kinase	1892	integral membrane protein, putative
1862	DNA-directed RNA polymerase (mitochondrial)	1893	putative protein
1863	putative DNA-binding protein	1894	pyruvate decarboxylase-1 (Pdc1)
1864	late embryogenesis abundant M17 protein	1895	putative malate oxidoreductase
1865	putative protein	1896	putative histone H2B
1866	delta-1-pyrroline-5- carboxylate synthetase	1897	snoRNA
1867	putative 60s ribosomal protein L10	1898	symbiosis-related like protein
1868	cytochrome P450 CYP86A1	1899	unknown protein
		1900	unknown protein
		1901	hypothetical protein
		1902	putative protein
		1903	copper-binding protein-like
		1904	putative protein
		1905	unknown protein
		1906	putative glyoxalase II

TABLE 1 (cont)

1907	No function assigned by	1936	serine/threonine protein kinase,
TIGR		putative	
1908	hypothetical protein	1937	potassium transporter - like protein
1909	flavanone 3-hydroxylase	1938	lactate dehydrogenase (LDH1)
(FH3)		1939	hypothetical protein
1910	putative laccase	1940	unknown protein
1911	putative protein kinase	1941	putative thaumatin
1912	myb-related protein, 33.3K (pir S71284)	1942	putative reticuline oxidase-like protein
1913	unknown protein	1943	uracil phosphoribosyltransferase, putative
1914	endo-xyloglucan transferase - like protein	1944	transcription factor, putative
1915	TMV resistance protein N - like	1945	unknown protein
1916	putative xyloglucan endotransglycosylase	1946	unknown protein
1917	unknown protein	1947	GATA transcription factor 4
1918	proline transporter 2	1948	unknown protein
1919	resistance protein, putative	1949	unknown protein
1920	actin, putative	1950	senescence-associated protein -like
1921	putative related to microbial divalent cation tolerance proteins	1951	putative pollen allergen
1922	unknown protein	1952	unknown protein
1923	putative glycosyl transferase	1953	putative protein
1924	unknown protein	1954	glycine-rich protein
1925	putative protein phosphatase 2C	1955	putative protein
1926	unknown protein	1956	3-methyladenine DNA glycosylase, putative
1927	serpin, putative	1957	endoplasmic reticulum-type calcium-transporting ATPase 4
1928	cinnamyl-alcohol dehydrogenase CAD1	1958	putative pectinesterase
1929	putative protein import receptor	1959	cytochrome P450-like protein
1930	unknown protein	1960	RNA-binding protein (cp33)
1931	unknown protein	1961	CONSTANS-like 1
1932	putative protein	1962	putative small heat shock protein
1933	putative CDP- diacylglycerol-glycerol-3- phosphate 3- phosphatidyltransferase	1963	hypothetical protein
1934	unknown protein	1964	unknown protein
1935	putative LRR receptor-like protein kinase	1965	cytochrome P450 - like protein
		1966	cysteine proteinase inhibitor like protein
		1967	nicotianamine synthase (dbj BAA74589.1)
		1968	copper amine oxidase like protein (fragment2)
		1969	putative SCARECROW gene regulator
		1970	unknown protein
		1971	unknown protein

TABLE 1 (cont)

1972	putative alanine acetyl transferase	2001	auxin response factor 1
1973	unknown protein	2002	pathogenesis-related protein 1 precursor, 18.9K
1974	unknown protein	2003	hypothetical protein
1975	unknown protein	2004	unknown protein
1976	putative extensin	2005	zinc finger protein Zat12
1977	putative protein kinase	2006	unknown protein
1978	putative protein kinase	2007	unknown protein
1979	NADPH-dependent codeinone reductase, putative	2008	cyclin, putative
1980	peroxidase	2009	2-dehydro-3-deoxyphosphoheptonate aldolase
1981	putative cytochrome P450	2010	glutathione synthetase gsh2
1982	No function assigned by TIGR	2011	heat shock protein 17
1983	putative zinc-finger protein (B-box zinc finger domain)	2012	putative Na ⁺ -dependent inorganic phosphate cotransporter
1984	putative tyrosine aminotransferase	2013	No function assigned by TIGR
1985	hypothetical protein	2014	unknown protein
1986	DNA binding protein	2015	putative protein
1987	putative fatty acid elongase	2016	similar to RING-H2 finger protein RHC1a GB:AAC69854 GI:3790583 from [Arabidopsis thaliana]
1988	bZIP transcription factor - like protein	2017	calcium-binding protein - like
1989	xyloglucan fucosyltransferase, putative	2018	putative protein
1990	unknown protein	2019	putative aldehyde dehydrogenase
1991	unknown protein	2020	auxin-responsive GH3 - like protein
1992	putative protein	2021	putative protein
1993	myb factor, putative	2022	Phosphoglycerate dehydrogenase - like protein
1994	Myb-family transcription factor, putative	2023	unknown protein
1995	putative fructose bisphosphate aldolase	2024	unknown protein
1996	myrosinase-associated protein, putative	2025	PSI type III chlorophyll a/b-binding protein, putative
1997	cytochrome P450 like protein	2026	putative protein
1998	similar to SOR1 from the fungus Cercospora nicotianae	2027	putative protein
1999	similar to embryo-abundant protein GB:L47672 GI:1350530 from [Picea glauca]	2028	glutaredoxin, putative
2000	alcohol dehydrogenase	2029	hypothetical protein
		2030	No function assigned by TIGR
		2031	putative protein
		2032	jasmonate inducible protein, putative
		2033	putative polygalacturonase isoenzyme 1 beta subunit
		2034	putative small heat shock protein

TABLE 1 (cont)

2035	unknown protein	2068	putative chlorophyll A-B binding protein
2036	putative disease resistance protein	2069	Lhcb3 chlorophyll a/b binding protein (gb AAD28773.1)
2037	putative protein	2070	luminal binding protein (dbj BAA13948.1)
2038	ethylene-responsive element binding factor, putative	2071	hydroxypyruvate reductase (HPR)
2039	putative protein	2072	epoxide hydrolase (ATsEH)
2040	Pollen-specific protein precursor like	2073	putative protein (fragment)
2041	putative protein	2074	unknown protein
2042	unknown protein	2075	hypothetical protein
2043	EF-Hand containing protein-like	2076	putative glucosyl transferase
2044	unknown protein	2077	putative glucosyl transferase
2045	putative calcium-transporting ATPase	2078	putative 3-methylcrotonyl-CoA carboxylase
2046	antifungal protein-like (PDF1.2)	2079	putative peroxidase
2047	pathogenesis-related PR-1-like protein	2080	acyl-CoA oxidase (gb AAC13497.1)
2048	similar to Mlo proteins from <i>H. vulgare</i>	2081	alternative oxidase 1a precursor
2049	putative steroid sulfotransferase	2082	putative transcription factor (MYB4)
2050	trehalase - like protein	2083	serine acetyltransferase
2051	thioredoxin f1	2084	ATP-sulfurylase
2052	unknown protein	2085	calreticulin (crt1)
2053	alanine-glyoxylate aminotransferase	2086	putative prohibitin 2
2054	integral membrane protein, putative	2087	putative monodehydroascorbate reductase
2055	hypothetical protein	2088	branched-chain alpha-keto acid decarboxylase E1 beta subunit
2056	unknown protein	2089	cytokinin oxidase - like protein
2057	hypothetical protein	2090	putative receptor-like protein kinase
2058	unknown protein	2091	unknown protein
2059	unknown protein	2092	hypothetical protein
2060	unknown protein	2093	No function assigned by TIGR
2061	drought-induced-19-like 1	2094	putative APG protein
2062	unknown protein	2095	glutathione S-transferase, putative
2063	putative protein	2096	phytochrome-associated protein 1 (PAP1)
2064	putative protein	2097	amidophosphoribosyltransferase
2065	AtG2-like protein	2098	nonphototropic hypocotyl 1
2066	Lhca2 protein	2099	3-keto-acyl-CoA thiolase 2 (gb AAC17877.1)
2067	phytoeyanin	2100	pEARLI 1
		2101	glutathione reductase, cytosolic

TABLE 1 (cont)

2102	putative protein	2128	putative protein disulfide-isomerase
2103	putative protein	2129	unknown protein
2104	putative aldehyde oxidase	2130	beta-1,3-glucanase class I precursor
2105	probable photosystem I chain XI precursor	2131	homeobox-leucine zipper protein HAT5 (HD-ZIP protein 5) (HD-ZIP protein ATHB-1)
2106	photosystem II polypeptide, putative	2132	putative cyclic nucleotide-regulated ion channel protein
2107	photosystem II reaction center 6.1KD protein	2133	P II nitrogen sensing protein GLB I
2108	33 kDa polypeptide of oxygen-evolving complex (OEC) in photosystem II (emb)CAA75629.1)	2134	H-protein promoter binding factor-1 (gb)AAC24592.1)
2109	60S ribosomal protein	2135	GAST1-like protein
L11B		2136	cytochrome P450 GA3
2110	extA (emb)CAA47807.1)	2137	putative protein
2111	zinc finger protein OBP4 - like	2138	Myb-related transcription factor-like protein
2112	sterol delta7 reductase	2139	putative phloem-specific lectin
2113	putative RAS-related protein, RAB11C	2140	protein kinase - like protein
2114	glucosyltransferase like protein	2141	unknown protein
2115	zinc finger protein (PMZ), putative	2142	SCARECROW transcriptional regulator-like
2116	6,7-dimethyl-8-ribityllumazine synthase precursor	2143	unknown protein
2117	putative protein	2144	unknown protein
2118	osmotin precursor	2145	putative protein
2119	No function assigned by TIGR	2146	calnexin homolog
2120	ferredoxin precursor isolog	2147	PP1/PP2A phosphatases
2121	GH3 like protein		pleiotropic regulator PRL2
2122	non-specific lipid transfer protein	2148	xyloglucan endotransglycosylase, putative
2123	homeodomain transcription factor (HAT9)	2149	putative calmodulin
2124	putative cytochrome P450 monooxygenase	2150	spermine synthase (ACL5)
2125	putative protein kinase	2151	snRNA
2126	putative protein	2152	photosystem I subunit V precursor, putative
2127	glyceraldehyde-3-phosphate dehydrogenase	2153	putative potassium transporter
		2154	Homeodomain - like protein
		2155	putative protein
		2156	unknown protein
		2157	CALMODULIN-RELATED PROTEIN 2, TOUCH-INDUCED (TCH2)
		2158	putative protein phosphatase 2C

TABLE 1 (cont)

2159	monosaccharide transport protein, STP4	2187	defender against cell death protein
2160	hypothetical protein	2188	AP2 domain containing protein, putative
2161	unknown protein	2189	aetin depolymerizing factor - like protein
2162	hypothetical protein	2190	putative calcium-dependent protein kinase (U90439)
2163	putative protein kinase	2191	phosphoribosylanthranilate transferase, putative
2164	putative serine/threonine protein kinase	2192	oligopeptide transporter, putative
2165	jasmonate inducible protein, putative	2193	calmodulin-like protein
2166	similar to several small proteins (~100 aa) that are induced by heat, auxin, ethylene and wounding such as Phaseolus aureus indole-3-acetic acid induced protein ARG (SW:32292)	2194	putative protease inhibitor
2167	unknown protein	2195	MAP kinase
2168	MYB-like protein	2196	DNA binding protein MybSt1, putative
2169	putative protein kinase	2197	putative protein
2170	unknown protein	2198	putative protein
2171	CLC-d chloride channel protein	2199	unknown protein
2172	cytochrome P450-like protein	2200	unknown protein
2173	putative glutathione S-transferase	2201	unknown protein
2174	putative mandelonitrile lyase	2202	putative protein
2175	hypothetical protein	2203	unknown protein
2176	putative trypsin inhibitor	2204	unknown protein
2177	male sterility 2-like protein (emb CAA68191.1)	2205	hypothetical protein
2178	unknown protein	2206	uncharacterized protein
2179	unknown protein	2207	putative protein
2180	putative protein	2208	hypothetical protein
2181	putative peroxidase	2209	peroxidase (emb CAA66967.1)
2182	putative thromboxane-A synthase	2210	putative flavonol 3-O-glucosyltransferase
2183	putative cytochrome P450	2211	putative flavonol 3-O-glucosyltransferase
2184	peroxidase ATP21a	2212	putative protein
2185	unknown protein	2213	glycerol-3-phosphate acyltransferase
2186	putative glutathione S-transferase	2214	putative beta-1,3-glucanase
		2215	putative ethylene response element binding protein (EREBP)
		2216	putative CONSTANS-like B-box zinc finger protein
		2217	putative protein
		2218	unknown protein
		2219	putative trehalose-6-phosphate phosphatase (AtTPPA)
		2220	putative protein

TABLE 1 (cont)

2221	putative protein	2251	lysine and histidine specific transporter, putative
2222	unknown protein	2252	putative protein
2223	unknown protein	2253	putative protein
2224	unknown protein	2254	putative sugar transporter protein
2225	hypothetical protein	2255	12S cruciferin seed storage protein
2226	putative metal-binding protein	2256	putative auxin-induced protein, IAA17/AXR3-1
2227	putative phosphoribosylglycinamide synthetase	2257	putative cyclin D
2228	unknown protein	2258	farnesyl diphosphate synthase precursor (gb AAB49290.1)
2229	putative protein	2259	putative potassium transport protein (TRH1)
2230	unknown protein	2260	putative NPK1-related MAP kinase
2231	unknown protein	2261	putative protein
2232	putative beta-galactosidase	2262	putative ABC transporter
2233	putative protein kinase	2263	putative DNA-directed RNA polymerase subunit
2234	putative protein	2264	putative small nuclear ribonucleoprotein E
2235	putative protein phosphatase 2C	2265	unknown protein
2236	putative growth regulator protein	2266	reticuline oxidase - like protein
2237	putative ABC transporter	2267	putative 1-aminocyclopropane-1-carboxylate oxidase
2238	chloride channel (emb CAA70310.1)	2268	similar to Mlo proteins from H. vulgare
2239	adrenodoxin - like protein	2269	long-chain-fatty-acid--CoA ligase-like protein
2240	NAM (no apical meristem)-like protein	2270	putative protein
2241	putative transcription factor MYB41	2271	chromatin remodelling complex ATPase chain ISWI -like protein
2242	Myb DNA binding protein - like	2272	hypothetical protein
2243	AtMYB84	2273	latex-abundant protein, putative
2244	photosystem II type I chlorophyll a/b binding protein	2274	N-acetylmethionine deacetylase-like protein, fragment
2245	putative aspartic proteinase	2275	putative DNA-binding protein
2246	jasmonate inducible protein, putative	2276	putative anthranilate N-hydroxycinnamoyl/benzoyltransferase
2247	putative protein	2277	putative DNA binding protein
2248	No function assigned by TIGR	2278	cytochrome P450 - like protein
2249	putative phosphatidylserine synthase	2279	putative DNA-binding protein
2250	putative nicotianamine synthase	2280	putative peptide transporter
		2281	putative reticuline oxidase-like protein

TABLE 1 (cont)

2282	thioredoxin, putative	2313	putative protein kinase
2283	nodulin-like protein	2314	indoleacetic acid (IAA)-inducible gene (IAA7)
2284	UDP-galactose transporter - like protein	2315	ATP-dependent Clp protease regulatory subunit CLPX
2285	putative fibrillin	2316	DNA-binding protein RAV1
2286	unknown protein	2317	putative protein
2287	unknown protein	2318	hypothetical protein
2288	unknown protein	2319	unknown protein
2289	hypothetical protein	2320	unknown protein
2290	glyceraldehyde 3-phosphate dehydrogenase A subunit (GapA)	2321	putative protein
2291	predicted protein of unknown function	2322	putative thioredoxin reductase
2292	putative protein	2323	unknown protein
2293	putative protein	2324	putative lectin
2294	myb-like protein	2325	No function assigned by TIGR
2295	hypothetical protein	2326	beta-fructosidase
2296	putative U5 small nuclear ribonucleoprotein, an RNA helicase	2327	chlorophyll a/b-binding protein CP29
2297	unknown protein	2328	photosystem I subunit PSI-E - like protein
2298	cinnamyl alcohol dehydrogenase - like protein	2329	peroxidase ATP8a
2299	hypothetical protein similar to extensin-like protein	2330	putative fructose bisphosphate aldolase
2300	unknown protein	2331	zinc finger protein ATZF1, putative
2301	putative chlorophyll a/b binding protein	2332	DegP protease precursor
2302	probable plasma membrane intrinsic protein 1c	2333	transcription factor-like protein
2303	hexokinase (ATHXK2)	2334	calcium-dependent protein kinase
2304	calcium-dependent protein kinase	2335	hypothetical protein
2305	5'-adenylylphosphosulfate reductase, putative	2336	putative protein
2306	Erd1 protein precursor (sp P42762)	2337	glucose-1-phosphate adenylyltransferase (APL3)
2307	putative protein	2338	No function assigned by TIGR
2308	putative protein	2339	putative Eukaryotic initiation factor 4A
2309	unknown protein	2340	No function assigned by TIGR
2310	BCS1 protein-like protein	2341	unknown protein
2311	putative protein	2342	beta tubulin 1, putative
2312	putative protein	2343	one helix protein (OHP)
		2344	No function assigned by TIGR
		2345	zinc finger protein 5, ZFP5
		2346	putative MYB family transcription factor
		2347	putative amino acid transporter protein

TABLE 1 (cont)

2348	putative potassium transporter	2374	putative PHD-type zinc finger protein
2349	protein kinase (AFC2)	2375	nuclear RNA binding protein A-like protein
2350	putative protein	2376	unknown protein
2351	No function assigned by TIGR	2377	unknown protein
2352	putative ubiquitin-conjugating enzyme E2	2378	unknown protein
2353	unknown protein	2379	putative amino-cyclopropane-carboxylic acid oxidase (ACC oxidase)
2354	cytochrome P450 monooxygenase (CYP71B3)	2380	hypothetical protein
2355	putative myrosinase-binding protein	2381	indole-3-acetate beta-glucosyltransferase like protein
2356	putative vacuolar sorting receptor	2382	predicted protein
2357	uridine diphosphate glucose epimerase	2383	unknown protein
2358	shaggy related protein kinase, ASK-GAMMA	2384	No function assigned by TIGR
2359	ankyrin repeat protein EMB506	2385	putative photosystem I reaction center subunit IV
2360	putative beta-alanine-pyruvate aminotransferase	2386	putative homeodomain transcription factor
2361	putative alcohol dehydrogenase	2387	putative purple acid phosphatase precursor
2362	putative receptor-like protein kinase	2388	No function assigned by TIGR
2363	unknown protein	2389	nitrate reductase 1 (NR1)
2364	putative methylmalonate semi-aldehyde dehydrogenase	2390	putative casein kinase II beta subunit
2365	hypothetical protein	2391	pEARLI 1-like protein
2366	unknown protein	2392	putative protein
2367	peroxidase ATP13a	2393	No function assigned by TIGR
2368	putative glutathione peroxidase	2394	unknown protein
2369	squamosa promoter binding protein-like 7	2395	putative cell wall-plasma membrane disconnecting CLCT protein (AIR1A)
2370	photosystem II core complex protein, putative	2396	unknown protein
2371	snoRNA	2397	scarecrow-like 11 - like
2372	photosystem I subunit X precursor	2398	putative anthocyanidin synthase
2373	MYB transcription factor (Atmyb2)	2399	putative AP2 domain transcription factor
		2400	caffeoyl-CoA O-methyltransferase - like protein
		2401	unknown protein
		2402	putative protein kinase
		2403	cytochrome P450 -like protein
		2404	putative MADS-box protein ANR1
		2405	putative glutathione S-transferase

TABLE 1 (cont)

2406	hypothetical protein	2437	putative protein
2407	similar to gibberellin-regulated proteins	2438	unknown protein
2408	unknown protein	2439	unknown protein
2409	putative sensory transduction histidine kinase	2440	putative protein
2410	similar to late embryogenesis abundant proteins	2441	No function assigned by TIGR
2411	unknown protein	2442	MADS-box protein AGL14
2412	putative protein	2443	No function assigned by TIGR
2413	putative ATP-dependent RNA helicase	2444	peptidylprolyl isomerase
2414	putative protein	2445	putative s-adenosylmethionine synthetase
2415	putative suerose synthetase	2446	peroxidase
2416	beta-fructofuranosidase 1	2447	ferrochelataase-I
2417	putative indole-3-acetate beta-glucosyltransferase	2448	putative eukaryotic initiation factor 4, eIF4
2418	hypothetical protein	2449	drought-inducible cysteine proteinase RD21A precursor -like protein
2419	DNA-directed RNA polymerase II, third largest subunit	2450	unknown protein
2420	putative transcription factor	2451	unknown protein
2421	homeobox-leucine zipper protein ATHB-5 (HD-zip protein ATHB-5) (sp P46667)	2452	No function assigned by TIGR
2422	putative ftsH chloroplast protease	2453	No function assigned by TIGR
2423	replication protein A1 - like	2454	salt-inducible like protein
2424	hypothetical protein	2455	glucose-6-phosphate 1-dehydrogenase
2425	unknown protein	2456	3-hydroxy-3-methylglutaryl CoA reductase (AA 1-592)
2426	unknown protein	2457	hypothetical protein
2427	putative methionine aminopeptidase	2458	putative protein
2428	unknown protein	2459	putative putative 60S ribosomal protein L17
2429	fatty acid elongase - like protein (cer2-like)	2460	putative inorganic pyrophosphatase
2430	unknown protein	2461	putative gamma-glutamyltransferase
2431	putative disease resistance response protein	2462	heat shock transcription factor - like protein
2432	putative protein	2463	mitochondrial chaperonin hsp60
2433	unknown protein	2464	unknown protein
2434	putative protein	2465	putative zinc finger protein identical to T10M13.22
2435	putative protein	2466	putative uridylyl transferase
2436	unknown protein	2467	nodulin-like protein
		2468	putative B-box zinc finger protein
		2469	No function assigned by TIGR
		2470	putative metalloproteinase

TABLE 1 (cont)

2471	putative cellular apoptosis susceptibility protein	2504	unknown protein
2472	hypothetical protein	2505	unknown protein
2473	hypothetical protein	2506	60S ribosomal protein L10A
2474	scarecrow-like 13 (SCL13)	2507	putative protein
2475	putative nucleoside triphosphatase	2508	receptor protein kinase (IRK1), putative
2476	unknown protein	2509	putative nematode-resistance protein
2477	No function assigned by TIGR	2510	tubulin alpha-5 chain-like protein
2478	hypothetical protein	2511	putative DNA-binding protein
2479	putative phospholipase	2512	unknown protein
2480	putative snRNP protein	2513	putative RGA1, gibberellin response modulation protein
2481	putative protein	2514	non phototropic hypocotyl 1-like
2482	putative lipase	2515	RING-H2 finger protein RHA1b
2483	putative nonsense-mediated mRNA decay protein	2516	putative myb-protein
2484	No function assigned by TIGR	2517	hydroperoxide lyase (HPOL) like protein
2485	protochlorophyllide reductase precursor	2518	serine/threonine-protein kinase, PK7
2486	No function assigned by TIGR	2519	putative vacuolar proton-ATPase subunit
2487	trehalose-6-phosphate synthase, putative	2520	putative polygalacturonase
2488	unknown protein	2521	putative ribosomal protein L8
2489	germin-like protein	2522	putative adenylate kinase
2490	plastid protein	2523	germin-like protein (GLP10)
2491	putative protein	2524	putative chlorophyll a/b binding protein
2492	hypothetical protein	2525	chloroplast single subunit DNA-dependent RNA polymerase
2493	unknown protein	2526	putative protein
2494	unknown protein	2527	hypothetical protein
2495	histone deacetylase-like protein	2528	hypothetical protein
2496	unknown protein	2529	b-keto acyl reductase, putative
2497	unknown protein	2530	cellulose synthase catalytic subunit
2498	putative protein	2531	putative 1-aminocyclopropane-1-carboxylate oxidase
2499	putative protein	2532	S-linalool synthase, putative
2500	No function assigned by TIGR	2533	phosphoribosyl-ATP pyrophosphohydrolase (At-IE)
2501	putative zinc transporter ZIP2-like	2534	disease resistance RPP5 like protein (fragment)
2502	unknown protein	2535	putative protein
2503	putative ribosomal-protein S6 kinase (ATPK19)	2536	beta-galactosidase like protein

TABLE 1 (cont)

2537	putative translation initiation factor eIF-2, gamma subunit	2566	unknown protein
2538	ankyrin like protein	2567	unknown protein
2539	histone H2A- like protein	2568	unknown protein
2540	putative protein	2569	serine/threonine kinase - like protein
2541	salt-tolerance zinc finger protein	2570	peroxidase (emb CAA66960.1)
2542	unknown protein	2571	putative protein
2543	putative protein	2572	hypothetical protein
2544	fructose-bisphosphate aldolase	2573	glycine-rich protein 2 (GRP2)
2545	peroxidase (emb CAA66964.1)	2574	unknown protein
2546	patatin-like protein	2575	berberine bridge enzyme-like protein
2547	salt-inducible protein homolog	2576	unknown protein
2548	hypothetical protein	2577	putative WD-repeat protein
2549	xyloglucan endo-transglycosylase-like protein	2578	serine/threonine kinase - like protein
2550	trihelix DNA-binding protein (GT2)	2579	serine /threonine kinase - like protein
2551	ubiquitin-conjugating enzyme 16, putative	2580	Cu2+-transporting ATPase-like protein
2552	homeobox protein	2581	translation initiation factor eIF4E
2553	envelope Ca2+-ATPase	2582	O-methyltransferase - like protein
2554	snap25a	2583	translation initiation factor eIF3 - like protein
2555	putative annexin	2584	No function assigned by TIGR
2556	putative protein	2585	unknown protein
2557	homeodomain transcription factor (ATHB-14)	2586	hypothetical protein
2558	heat shock protein, putative	2587	unknown protein
2559	peroxidase ATP23a	2588	unknown protein
2560	p68 RNA helicase, putative	2589	glycine-rich protein like
2561	potassium transporter, putative	2590	putative disease resistance protein
2562	putative eukaryotic translation initiation factor 2 alpha subunit, eIF2	2591	putative Na+/Ca2+ antiporter
2563	hypothetical protein	2592	putative hydroxymethylglutaryl-CoA lyase
2564	carnitine racemase like protein	2593	putative phosphoribosylaminoimidazole carboxylase
2565	No function assigned by TIGR	2594	SAR DNA-binding protein - like
		2595	response regulator, putative
		2596	fibrillin precursor-like protein
		2597	beta-ketoacyl-CoA synthase (FIDDLEHEAD)
		2598	lectin like protein
		2599	No function assigned by TIGR

TABLE 1 (cont)

2600	acidic endochitinase (dbj BAA21861.1)	2629	unknown protein
2601	unknown protein	2630	unknown protein
2602	hypothetical protein	2631	unknown protein
2603	predicted OR23 protein of unknown function	2632	nucleosome assembly protein I-like protein
2604	putative protein	2633	membrane channel like protein
2605	hypothetical protein	2634	anthocyanin2, putative
2606	glycerol-3-phosphate dehydrogenase	2635	TWIN SISTER OF FT (TSF)
2607	hypothetical protein	2636	putative myb-related transcription factor
2608	tat-binding protein, putative	2637	hypothetical protein
2609	putative protein	2638	putative RING zinc finger protein
2610	putative trehalose-6- phosphate phosphatase	2639	amino acid transport protein AAT1
2611	hypothetical protein	2640	putative protein
2612	putative flavonol 3-O- glucosyltransferase	2641	putative protein
2613	60S ribosomal protein L30	2642	xanthine dehydrogenase
2614	putative auxin-induced protein	2643	xanthine dehydrogenase - like protein
2615	putative nonspecific lipid- transfer protein precursor	2644	receptor protein kinase (IRK1), putative
2616	AtRer1A	2645	dehydrin-like protein
2617	putative aquaporin (tonoplast intrinsic protein gamma)	2646	unknown protein
2618	hypothetical protein	2647	aldehyde dehydrogenase homolog, putative
2619	putative alanine acetyl transferase	2648	Ran binding protein (AtRanBP1b)
2620	putative NADP-dependent glyceraldehyde-3- phosphate dehydrogenase	2649	putative squamosa-promoter binding protein
2621	putative DNA binding protein	2650	putative protein
2622	putative cystathionine gamma-synthase	2651	kinesin like protein
2623	unknown protein	2652	putative cellulose synthase
2624	malate oxidoreductase (malic enzyme)	2653	calmodulin (cam2)
2625	unknown protein	2654	fibrillarin - like protein
2626	cyclic nucleotide-gated cation channel	2655	putative transmembrane protein G5p
2627	glyoxalase II, putative	2656	putative peroxidase
2628	putative trypsin inhibitor	2657	putative SNF1-related protein kinase
		2658	glutathione S-transferase, putative
		2659	unknown protein
		2660	hypothetical protein
		2661	putative protein
		2662	phosphatidylinositol-4-phosphate 5-kinase isolog
		2663	putative tyrosine decarboxylase
		2664	unknown protein

TABLE 1 (cont)

2665	SGP1 monomeric G-protein (emb CAB54517.1)	2691	putative pyrophosphate-dependent phosphofructokinase alpha subunit
2666	putative serine carboxypeptidase II	2692	putative flavonol glucosyltransferase
2667	putative L5 ribosomal protein	2693	peroxidase ATP20a (emb CAA67338.1)
2668	putative glucosyltransferase	2694	TOPP8 serine/threonine protein
2669	flavonoid 3,5-hydroxylase like protein	2695	phosphatase type one auxin regulated protein IAA18, putative
2670	putative protein	2696	putative WRKY-type DNA binding protein
2671	putative protein	2697	putative glucan synthase
2672	putative Fe(II)/ascorbate oxidase	2698	squalene monooxygenase
2673	putative anthocyanin 5- aromatic acyltransferase	2699	putative proline-rich protein
2674	casein kinase I	2700	G2484-1 protein
2675	putative 2,3- bisphosphoglycerate- independent phosphoglycerate mutase	2701	heat shock protein 70 like protein
2676	putative glutathione S- transferase TSI-1	2702	unknown protein
2677	ATP-dependent RNA helicase	2703	unknown protein
2678	putative cytochrome P450		
2679	putative WD-40 repeat protein		
2680	No function assigned by TIGR		
2681	No function assigned by TIGR		
2682	putative protein		
2683	putative extensin		
2684	nodulin-26 - like protein		
2685	RNA helicase (emb CAA09212.1)		
2686	predicted protein of unknown function		
2687	putative berberine bridge enzyme		
2688	thioredoxin, putative		
2689	putative serine carboxypeptidase I		
2690	cytochrome P450-like protein		

TABLE 2

ABIOTIC STRESS RESPONSIVE GENE REGULATORY SEQUENCES

SEQ ID NO:	REGULATORY REGION	SEQ ID NO:	REGULATORY REGION	SEQ ID NO:	REGULATORY REGION
1	2704	51	2753	101	2802
2	2705	52	2754	102	2803
3	2706	53	2755	103	2804
4	2707	54	2756	104	2805
5	2708	55	2757	105	2806
6	2709	56	2758	106	2807
7	2710	57	2759	107	2808
8	2711	58	2760	108	2809
9	2712	59	2761	109	2810
10	2713	60	2762	110	2811
11	2714	61	2763	111	2812
12	2715	62	2764	112	2813
13	2716	63	2765	113	2814
14	2717	64	2766	114	2815
15	2718	65	2767	115	2816
16	2719	66	2768	116	2817
17	2720	67	2769	117	2818
18	2721	68	2770	118	2819
19	2722	69	NONE	119	2820
20	2723	70	2771	120	2821
21	2724	71	2772	121	2822
22	2725	72	2773	122	2823
23	2726	73	2774	123	2824
24	2727	74	2775	124	2825
25	2728	75	2776	125	2826
26	2729	76	2777	126	2827
27	2730	77	2778	127	2828
28	2731	78	2779	128	2829
29	2732	79	2780	129	2830
30	2733	80	2781	130	2831
31	2734	81	2782	131	2832
32	2735	82	2783	132	2833
33	2736	83	2784	133	2834
34	2737	84	2785	134	2835
35	2738	85	2786	135	2836
36	2739	86	2787	136	2837
37	2740	87	2788	137	2838
38	2741	88	2789	138	2839
39	2742	89	2790	139	2840
40	2743	90	2791	140	2841
41	2744	91	2792	141	2842
42	2745	92	2793	142	2843
43	NONE	93	2794	143	2844
44	2746	94	2795	144	NONE
45	2747	95	2796	145	2845
46	2748	96	2797	146	2846
47	2749	97	2798	147	2847
48	2750	98	2799	148	2848
49	2751	99	2800	149	2849
50	2752	100	2801	150	2850

TABLE 2 (cont)

151	2851	205	2905	259	2959
152	2852	206	2906	260	2960
153	2853	207	2907	261	2961
154	2854	208	2908	262	2962
155	2855	209	2909	263	2963
156	2856	210	2910	264	2964
157	2857	211	2911	265	2965
158	2858	212	2912	266	2966
159	2859	213	2913	267	2967
160	2860	214	2914	268	2968
161	2861	215	2915	269	2969
162	2862	216	2916	270	2970
163	2863	217	2917	271	2971
164	2864	218	2918	272	2972
165	2865	219	2919	273	2973
166	2866	220	2920	274	2974
167	2867	221	2921	275	2975
168	2868	222	2922	276	2976
169	2869	223	2923	277	2977
170	2870	224	2924	278	2978
171	2871	225	2925	279	2979
172	2872	226	2926	280	2980
173	2873	227	2927	281	2981
174	2874	228	2928	282	2982
175	2875	229	2929	283	2983
176	2876	230	2930	284	2984
177	2877	231	2931	285	2985
178	2878	232	2932	286	2986
179	2879	233	2933	287	2987
180	2880	234	2934	288	2988
181	2881	235	2935	289	2989
182	2882	236	2936	290	2990
183	2883	237	2937	291	2991
184	2884	238	2938	292	2992
185	2885	239	2939	293	2993
186	2886	240	2940	294	2994
187	2887	241	2941	295	2995
188	2888	242	2942	296	2996
189	2889	243	2943	297	2997
190	2890	244	2944	298	2998
191	2891	245	2945	299	2999
192	2892	246	2946	300	3000
193	2893	247	2947	301	3001
194	2894	248	2948	302	3002
195	2895	249	2949	303	3003
196	2896	250	2950	304	NONE
197	2897	251	2951	305	3004
198	2898	252	2952	306	3005
199	2899	253	2953	307	3006
200	2900	254	2954	308	3007
201	2901	255	2955	309	3008
202	2902	256	2956	310	3009
203	2903	257	2957	311	3010
204	2904	258	2958	312	3011

TABLE 2 (cont)

313	3012	367	3066	421	3120
314	3013	368	3067	422	3121
315	3014	369	3068	423	3122
316	3015	370	3069	424	3123
317	3016	371	3070	425	3124
318	3017	372	3071	426	3125
319	3018	373	3072	427	3126
320	3019	374	3073	428	3127
321	3020	375	3074	429	3128
322	3021	376	3075	430	3129
323	3022	377	3076	431	3130
324	3023	378	3077	432	3131
325	3024	379	3078	433	3132
326	3025	380	3079	434	3133
327	3026	381	3080	435	3134
328	3027	382	3081	436	3135
329	3028	383	3082	437	3136
330	3029	384	3083	438	3137
331	3030	385	3084	439	3138
332	3031	386	3085	440	3139
333	3032	387	3086	441	3140
334	3033	388	3087	442	3141
335	3034	389	3088	443	3142
336	3035	390	3089	444	3143
337	3036	391	3090	445	3144
338	3037	392	3091	446	3145
339	3038	393	3092	447	3146
340	3039	394	3093	448	3147
341	3040	395	3094	449	3148
342	3041	396	3095	450	3149
343	3042	397	3096	451	3150
344	3043	398	3097	452	3151
345	3044	399	3098	453	3152
346	3045	400	3099	454	3153
347	3046	401	3100	455	3154
348	3047	402	3101	456	3155
349	3048	403	3102	457	3156
350	3049	404	3103	458	3157
351	3050	405	3104	459	3158
352	3051	406	3105	460	3159
353	3052	407	3106	461	3160
354	3053	408	3107	462	3161
355	3054	409	3108	463	3162
356	3055	410	3109	464	3163
357	3056	411	3110	465	3164
358	3057	412	3111	466	3165
359	3058	413	3112	467	3166
360	3059	414	3113	468	3167
361	3060	415	3114	469	3168
362	3061	416	3115	470	3169
363	3062	417	3116	471	3170
364	3063	418	3117	472	3171
365	3064	419	3118	473	3172
366	3065	420	3119	474	3173

TABLE 2 (cont)

475	3174	529	3228	583	3282
476	3175	530	3229	584	3283
477	3176	531	3230	585	3284
478	3177	532	3231	586	3285
479	3178	533	3232	587	3286
480	3179	534	3233	588	3287
481	3180	535	3234	589	3288
482	3181	536	3235	590	3289
483	3182	537	3236	591	3290
484	3183	538	3237	592	3291
485	3184	539	3238	593	3292
486	3185	540	3239	594	3293
487	3186	541	3240	595	3294
488	3187	542	3241	596	3295
489	3188	543	3242	597	3296
490	3189	544	3243	598	3297
491	3190	545	3244	599	3298
492	3191	546	3245	600	3299
493	3192	547	3246	601	3300
494	3193	548	3247	602	3301
495	3194	549	3248	603	3302
496	3195	550	3249	604	3303
497	3196	551	3250	605	3304
498	3197	552	3251	606	3305
499	3198	553	3252	607	3306
500	3199	554	3253	608	3307
501	3200	555	3254	609	3308
502	3201	556	3255	610	3309
503	3202	557	3256	611	3310
504	3203	558	3257	612	3311
505	3204	559	3258	613	3312
506	3205	560	3259	614	3313
507	3206	561	3260	615	3314
508	3207	562	3261	616	3315
509	3208	563	3262	617	3316
510	3209	564	3263	618	3317
511	3210	565	3264	619	3318
512	3211	566	3265	620	3319
513	3212	567	3266	621	3320
514	3213	568	3267	622	3321
515	3214	569	3268	623	3322
516	3215	570	3269	624	3323
517	3216	571	3270	625	3324
518	3217	572	3271	626	3325
519	3218	573	3272	627	3326
520	3219	574	3273	628	3327
521	3220	575	3274	629	3328
522	3221	576	3275	630	3329
523	3222	577	3276	631	3330
524	3223	578	3277	632	3331
525	3224	579	3278	633	3332
526	3225	580	3279	634	3333
527	3226	581	3280	635	3334
528	3227	582	3281	636	3335

TABLE 2 (cont)

637	3336	691	3390	745	3444
638	3337	692	3391	746	3445
639	3338	693	3392	747	3446
640	3339	694	3393	748	3447
641	3340	695	3394	749	3448
642	3341	696	3395	750	3449
643	3342	697	3396	751	3450
644	3343	698	3397	752	3451
645	3344	699	3398	753	3452
646	3345	700	3399	754	3453
647	3346	701	3400	755	3454
648	3347	702	3401	756	3455
649	3348	703	3402	757	3456
650	3349	704	3403	758	3457
651	3350	705	3404	759	3458
652	3351	706	3405	760	3459
653	3352	707	3406	761	3460
654	3353	708	3407	762	3461
655	3354	709	3408	763	3462
656	3355	710	3409	764	3463
657	3356	711	3410	765	3464
658	3357	712	3411	766	3465
659	3358	713	3412	767	3466
660	3359	714	3413	768	3467
661	3360	715	3414	769	3468
662	3361	716	3415	770	3469
663	3362	717	3416	771	3470
664	3363	718	3417	772	3471
665	3364	719	3418	773	3472
666	3365	720	3419	774	3473
667	3366	721	3420	775	3474
668	3367	722	3421	776	3475
669	3368	723	3422	777	3476
670	3369	724	3423	778	3477
671	3370	725	3424	779	3478
672	3371	726	3425	780	3479
673	3372	727	3426	781	3480
674	3373	728	3427	782	3481
675	3374	729	3428	783	3482
676	3375	730	3429	784	3483
677	3376	731	3430	785	3484
678	3377	732	3431	786	3485
679	3378	733	3432	787	3486
680	3379	734	3433	788	3487
681	3380	735	3434	789	3488
682	3381	736	3435	790	3489
683	3382	737	3436	791	3490
684	3383	738	3437	792	3491
685	3384	739	3438	793	3492
686	3385	740	3439	794	3493
687	3386	741	3440	795	3494
688	3387	742	3441	796	3495
689	3388	743	3442	797	3496
690	3389	744	3443	798	3497

TABLE 2 (cont)

799	3498	853	3552	907	3603
800	3499	854	3553	908	3604
801	3500	855	3554	909	3605
802	3501	856	3555	910	3606
803	3502	857	3556	911	3607
804	3503	858	3557	912	3608
805	3504	859	3558	913	3609
806	3505	860	3559	914	3610
807	3506	861	3560	915	3611
808	3507	862	3561	916	3612
809	3508	863	3562	917	3613
810	3509	864	3563	918	3614
811	3510	865	3564	919	3615
812	3511	866	3565	920	3616
813	3512	867	3566	921	3617
814	3513	868	3567	922	3618
815	3514	869	3568	923	3619
816	3515	870	3569	924	3620
817	3516	871	3570	925	3621
818	3517	872	3571	926	3622
819	3518	873	3572	927	3623
820	3519	874	3573	928	3624
821	3520	875	3574	929	3625
822	3521	876	3575	930	3626
823	3522	877	3576	931	3627
824	3523	878	3577	932	3628
825	3524	879	3578	933	3629
826	3525	880	3579	934	3630
827	3526	881	3580	935	NONE
828	3527	882	3581	936	3631
829	3528	883	3582	937	3632
830	3529	884	3583	938	3633
831	3530	885	3584	939	3634
832	3531	886	3585	940	3635
833	3532	887	NONE	941	3636
834	3533	888	3586	942	3637
835	3534	889	3587	943	3638
836	3535	890	3588	944	3639
837	3536	891	3589	945	3640
838	3537	892	3590	946	3641
839	3538	893	3591	947	3642
840	3539	894	NONE	948	3643
841	3540	895	NONE	949	3644
842	3541	896	3592	950	3645
843	3542	897	3593	951	3646
844	3543	898	3594	952	3647
845	3544	899	3595	953	3648
846	3545	900	3596	954	3649
847	3546	901	3597	955	3650
848	3547	902	3598	956	3651
849	3548	903	3599	957	3652
850	3549	904	3600	958	3653
851	3550	905	3601	959	3654
852	3551	906	3602	960	3655

TABLE 2 (cont)

961	3656	1015	3710	1069	3764
962	3657	1016	3711	1070	3765
963	3658	1017	3712	1071	3766
964	3659	1018	3713	1072	3767
965	3660	1019	3714	1073	3768
966	3661	1020	3715	1074	3769
967	3662	1021	3716	1075	3770
968	3663	1022	3717	1076	3771
969	3664	1023	3718	1077	3772
970	3665	1024	3719	1078	3773
971	3666	1025	3720	1079	3774
972	3667	1026	3721	1080	3775
973	3668	1027	3722	1081	3776
974	3669	1028	3723	1082	3777
975	3670	1029	3724	1083	3778
976	3671	1030	3725	1084	3779
977	3672	1031	3726	1085	3780
978	3673	1032	3727	1086	3781
979	3674	1033	3728	1087	NONE
980	3675	1034	3729	1088	3782
981	3676	1035	3730	1089	3783
982	3677	1036	3731	1090	3784
983	3678	1037	3732	1091	3785
984	3679	1038	3733	1092	3786
985	3680	1039	3734	1093	3787
986	3681	1040	3735	1094	3788
987	3682	1041	3736	1095	3789
988	3683	1042	3737	1096	3790
989	3684	1043	3738	1097	3791
990	3685	1044	3739	1098	3792
991	3686	1045	3740	1099	3793
992	3687	1046	3741	1100	3794
993	3688	1047	3742	1101	3795
994	3689	1048	3743	1102	3796
995	3690	1049	3744	1103	3797
996	3691	1050	3745	1104	3798
997	3692	1051	3746	1105	3799
998	3693	1052	3747	1106	3800
999	3694	1053	3748	1107	3801
1000	3695	1054	3749	1108	3802
1001	3696	1055	3750	1109	3803
1002	3697	1056	3751	1110	3804
1003	3698	1057	3752	1111	3805
1004	3699	1058	3753	1112	3806
1005	3700	1059	3754	1113	3807
1006	3701	1060	3755	1114	3808
1007	3702	1061	3756	1115	3809
1008	3703	1062	3757	1116	3810
1009	3704	1063	3758	1117	3811
1010	3705	1064	3759	1118	3812
1011	3706	1065	3760	1119	3813
1012	3707	1066	3761	1120	3814
1013	3708	1067	3762	1121	3815
1014	3709	1068	3763	1122	3816

TABLE 2 (cont)

1123	3817	1177	3871	1231	3925
1124	3818	1178	3872	1232	3926
1125	3819	1179	3873	1233	3927
1126	3820	1180	3874	1234	3928
1127	3821	1181	3875	1235	3929
1128	3822	1182	3876	1236	3930
1129	3823	1183	3877	1237	3931
1130	3824	1184	3878	1238	3932
1131	3825	1185	3879	1239	3933
1132	3826	1186	3880	1240	3934
1133	3827	1187	3881	1241	3935
1134	3828	1188	3882	1242	3936
1135	3829	1189	3883	1243	3937
1136	3830	1190	3884	1244	3938
1137	3831	1191	3885	1245	3939
1138	3832	1192	3886	1246	3940
1139	3833	1193	3887	1247	3941
1140	3834	1194	3888	1248	3942
1141	3835	1195	3889	1249	3943
1142	3836	1196	3890	1250	3944
1143	3837	1197	3891	1251	3945
1144	3838	1198	3892	1252	3946
1145	3839	1199	3893	1253	3947
1146	3840	1200	3894	1254	3948
1147	3841	1201	3895	1255	3949
1148	3842	1202	3896	1256	3950
1149	3843	1203	3897	1257	3951
1150	3844	1204	3898	1258	3952
1151	3845	1205	3899	1259	3953
1152	3846	1206	3900	1260	3954
1153	3847	1207	3901	1261	3955
1154	3848	1208	3902	1262	3956
1155	3849	1209	3903	1263	3957
1156	3850	1210	3904	1264	3958
1157	3851	1211	3905	1265	3959
1158	3852	1212	3906	1266	3960
1159	3853	1213	3907	1267	3961
1160	3854	1214	3908	1268	3962
1161	3855	1215	3909	1269	3963
1162	3856	1216	3910	1270	3964
1163	3857	1217	3911	1271	3965
1164	3858	1218	3912	1272	3966
1165	3859	1219	3913	1273	3967
1166	3860	1220	3914	1274	3968
1167	3861	1221	3915	1275	3969
1168	3862	1222	3916	1276	3970
1169	3863	1223	3917	1277	3971
1170	3864	1224	3918	1278	3972
1171	3865	1225	3919	1279	3973
1172	3866	1226	3920	1280	3974
1173	3867	1227	3921	1281	3975
1174	3868	1228	3922	1282	3976
1175	3869	1229	3923	1283	3977
1176	3870	1230	3924	1284	3978

TABLE 2 (cont)

1285	3979	1339	4032	1393	4086
1286	3980	1340	4033	1394	4087
1287	3981	1341	4034	1395	4088
1288	3982	1342	4035	1396	4089
1289	3983	1343	4036	1397	4090
1290	3984	1344	4037	1398	4091
1291	3985	1345	4038	1399	4092
1292	3986	1346	4039	1400	4093
1293	3987	1347	4040	1401	4094
1294	3988	1348	4041	1402	4095
1295	3989	1349	4042	1403	4096
1296	3990	1350	4043	1404	4097
1297	3991	1351	4044	1405	4098
1298	3992	1352	4045	1406	4099
1299	3993	1353	4046	1407	4100
1300	3994	1354	4047	1408	4101
1301	3995	1355	4048	1409	4102
1302	3996	1356	4049	1410	4103
1303	3997	1357	4050	1411	4104
1304	3998	1358	4051	1412	4105
1305	3999	1359	4052	1413	4106
1306	4000	1360	4053	1414	4107
1307	4001	1361	4054	1415	4108
1308	4002	1362	4055	1416	4109
1309	4003	1363	4056	1417	4110
1310	4004	1364	4057	1418	4111
1311	4005	1365	4058	1419	4112
1312	4006	1366	4059	1420	4113
1313	4007	1367	4060	1421	4114
1314	4008	1368	4061	1422	4115
1315	4009	1369	4062	1423	4116
1316	4010	1370	4063	1424	4117
1317	4011	1371	4064	1425	4118
1318	4012	1372	4065	1426	4119
1319	4013	1373	4066	1427	4120
1320	4014	1374	4067	1428	4121
1321	4015	1375	4068	1429	4122
1322	4016	1376	4069	1430	4123
1323	4017	1377	4070	1431	4124
1324	4018	1378	4071	1432	NONE
1325	4019	1379	4072	1433	4125
1326	4020	1380	4073	1434	4126
1327	4021	1381	4074	1435	4127
1328	4022	1382	4075	1436	4128
1329	4023	1383	4076	1437	4129
1330	NONE	1384	4077	1438	4130
1331	4024	1385	4078	1439	4131
1332	4025	1386	4079	1440	4132
1333	4026	1387	4080	1441	4133
1334	4027	1388	4081	1442	4134
1335	4028	1389	4082	1443	4135
1336	4029	1390	4083	1444	4136
1337	4030	1391	4084	1445	4137
1338	4031	1392	4085	1446	4138

TABLE 2 (cont)

1447	4139	1501	4193	1555	4247
1448	4140	1502	4194	1556	4248
1449	4141	1503	4195	1557	4249
1450	4142	1504	4196	1558	NONE
1451	4143	1505	4197	1559	4250
1452	4144	1506	4198	1560	4251
1453	4145	1507	4199	1561	4252
1454	4146	1508	4200	1562	4253
1455	4147	1509	4201	1563	4254
1456	4148	1510	4202	1564	4255
1457	4149	1511	4203	1565	4256
1458	4150	1512	4204	1566	4257
1459	4151	1513	4205	1567	4258
1460	4152	1514	4206	1568	4259
1461	4153	1515	4207	1569	4260
1462	4154	1516	4208	1570	4261
1463	4155	1517	4209	1571	4262
1464	4156	1518	4210	1572	4263
1465	4157	1519	4211	1573	4264
1466	4158	1520	4212	1574	4265
1467	4159	1521	4213	1575	4266
1468	4160	1522	4214	1576	4267
1469	4161	1523	4215	1577	4268
1470	4162	1524	4216	1578	4269
1471	4163	1525	4217	1579	4270
1472	4164	1526	4218	1580	4271
1473	4165	1527	4219	1581	4272
1474	4166	1528	4220	1582	4273
1475	4167	1529	4221	1583	4274
1476	4168	1530	4222	1584	4275
1477	4169	1531	4223	1585	4276
1478	4170	1532	4224	1586	4277
1479	4171	1533	4225	1587	4278
1480	4172	1534	4226	1588	4279
1481	4173	1535	4227	1589	4280
1482	4174	1536	4228	1590	4281
1483	4175	1537	4229	1591	4282
1484	4176	1538	4230	1592	4283
1485	4177	1539	4231	1593	4284
1486	4178	1540	4232	1594	4285
1487	4179	1541	4233	1595	4286
1488	4180	1542	4234	1596	4287
1489	4181	1543	4235	1597	4288
1490	4182	1544	4236	1598	4289
1491	4183	1545	4237	1599	4290
1492	4184	1546	4238	1600	4291
1493	4185	1547	4239	1601	4292
1494	4186	1548	4240	1602	4293
1495	4187	1549	4241	1603	4294
1496	4188	1550	4242	1604	4295
1497	4189	1551	4243	1605	4296
1498	4190	1552	4244	1606	4297
1499	4191	1553	4245	1607	4298
1500	4192	1554	4246	1608	4299

TABLE 2 (cont)

1609	4300	1663	NONE	1717	4406
1610	4301	1664	4354	1718	4407
1611	4302	1665	4355	1719	4408
1612	4303	1666	4356	1720	4409
1613	4304	1667	4357	1721	4410
1614	4305	1668	4358	1722	4411
1615	4306	1669	4359	1723	4412
1616	4307	1670	4360	1724	4413
1617	4308	1671	4361	1725	4414
1618	4309	1672	4362	1726	4415
1619	4310	1673	4363	1727	4416
1620	4311	1674	4364	1728	4417
1621	4312	1675	4365	1729	4418
1622	4313	1676	4366	1730	4419
1623	4314	1677	4367	1731	4420
1624	4315	1678	4368	1732	4421
1625	4316	1679	4369	1733	4422
1626	4317	1680	4370	1734	4423
1627	4318	1681	4371	1735	4424
1628	4319	1682	4372	1736	4425
1629	4320	1683	4373	1737	4426
1630	4321	1684	4374	1738	4427
1631	4322	1685	4375	1739	4428
1632	4323	1686	4376	1740	4429
1633	4324	1687	4377	1741	4430
1634	4325	1688	4378	1742	4431
1635	4326	1689	4379	1743	4432
1636	4327	1690	4380	1744	4433
1637	4328	1691	4381	1745	4434
1638	4329	1692	4382	1746	4435
1639	4330	1693	4383	1747	4436
1640	4331	1694	4384	1748	4437
1641	4332	1695	4385	1749	4438
1642	4333	1696	4386	1750	4439
1643	4334	1697	4387	1751	4440
1644	4335	1698	4388	1752	4441
1645	4336	1699	4389	1753	4442
1646	4337	1700	4390	1754	4443
1647	4338	1701	4391	1755	4444
1648	4339	1702	4392	1756	4445
1649	4340	1703	4393	1757	4446
1650	4341	1704	4394	1758	4447
1651	4342	1705	4395	1759	4448
1652	4343	1706	4396	1760	4449
1653	4344	1707	4397	1761	4450
1654	4345	1708	4398	1762	4451
1655	4346	1709	4399	1763	4452
1656	4347	1710	4400	1764	4453
1657	4348	1711	4401	1765	4454
1658	4349	1712	NONE	1766	4455
1659	4350	1713	4402	1767	4456
1660	4351	1714	4403	1768	4457
1661	4352	1715	4404	1769	4458
1662	4353	1716	4405	1770	4459

TABLE 2 (cont)

1771	4460	1825	4512	1879	4566
1772	4461	1826	4513	1880	4567
1773	4462	1827	4514	1881	4568
1774	4463	1828	4515	1882	4569
1775	4464	1829	4516	1883	4570
1776	4465	1830	4517	1884	4571
1777	4466	1831	4518	1885	4572
1778	4467	1832	4519	1886	4573
1779	4468	1833	4520	1887	4574
1780	4469	1834	4521	1888	4575
1781	4470	1835	4522	1889	4576
1782	4471	1836	4523	1890	4577
1783	4472	1837	4524	1891	4578
1784	NONE	1838	4525	1892	4579
1785	4473	1839	4526	1893	4580
1786	4474	1840	4527	1894	4581
1787	4475	1841	4528	1895	4582
1788	4476	1842	4529	1896	4583
1789	4477	1843	4530	1897	NONE
1790	4478	1844	4531	1898	4584
1791	4479	1845	4532	1899	4585
1792	4480	1846	4533	1900	4586
1793	4481	1847	4534	1901	4587
1794	4482	1848	4535	1902	4588
1795	4483	1849	4536	1903	4589
1796	4484	1850	4537	1904	4590
1797	4485	1851	4538	1905	4591
1798	4486	1852	4539	1906	4592
1799	4487	1853	4540	1907	NONE
1800	4488	1854	4541	1908	4593
1801	4489	1855	4542	1909	4594
1802	4490	1856	4543	1910	4595
1803	NONE	1857	4544	1911	4596
1804	4491	1858	4545	1912	4597
1805	4492	1859	4546	1913	4598
1806	4493	1860	4547	1914	4599
1807	4494	1861	4548	1915	4600
1808	4495	1862	4549	1916	4601
1809	4496	1863	4550	1917	4602
1810	4497	1864	4551	1918	4603
1811	4498	1865	4552	1919	4604
1812	4499	1866	4553	1920	4605
1813	4500	1867	4554	1921	4606
1814	4501	1868	4555	1922	4607
1815	4502	1869	4556	1923	4608
1816	4503	1870	4557	1924	4609
1817	4504	1871	4558	1925	4610
1818	4505	1872	4559	1926	4611
1819	4506	1873	4560	1927	4612
1820	4507	1874	4561	1928	4613
1821	4508	1875	4562	1929	4614
1822	4509	1876	4563	1930	4615
1823	4510	1877	4564	1931	4616
1824	4511	1878	4565	1932	4617

TABLE 2 (cont)

1933	4618	1987	4672	2041	4725
1934	4619	1988	4673	2042	4726
1935	4620	1989	4674	2043	4727
1936	4621	1990	4675	2044	4728
1937	4622	1991	4676	2045	4729
1938	4623	1992	4677	2046	4730
1939	4624	1993	4678	2047	4731
1940	4625	1994	4679	2048	4732
1941	4626	1995	4680	2049	4733
1942	4627	1996	4681	2050	4734
1943	4628	1997	4682	2051	4735
1944	4629	1998	4683	2052	4736
1945	4630	1999	4684	2053	4737
1946	4631	2000	4685	2054	4738
1947	4632	2001	4686	2055	4739
1948	4633	2002	4687	2056	4740
1949	4634	2003	4688	2057	4741
1950	4635	2004	4689	2058	4742
1951	4636	2005	4690	2059	4743
1952	4637	2006	4691	2060	4744
1953	4638	2007	4692	2061	4745
1954	4639	2008	4693	2062	4746
1955	4640	2009	4694	2063	4747
1956	4641	2010	4695	2064	4748
1957	4642	2011	4696	2065	4749
1958	4643	2012	4697	2066	4750
1959	4644	2013	4698	2067	4751
1960	4645	2014	4699	2068	4752
1961	4646	2015	4700	2069	4753
1962	4647	2016	4701	2070	4754
1963	4648	2017	4702	2071	4755
1964	4649	2018	4703	2072	4756
1965	4650	2019	4704	2073	4757
1966	4651	2020	4705	2074	4758
1967	4652	2021	4706	2075	4759
1968	4653	2022	4707	2076	4760
1969	4654	2023	4708	2077	4761
1970	4655	2024	4709	2078	4762
1971	4656	2025	4710	2079	4763
1972	4657	2026	4711	2080	4764
1973	4658	2027	4712	2081	4765
1974	4659	2028	4713	2082	4766
1975	4660	2029	4714	2083	4767
1976	4661	2030	NONE	2084	4768
1977	4662	2031	4715	2085	4769
1978	4663	2032	4716	2086	4770
1979	4664	2033	4717	2087	4771
1980	4665	2034	4718	2088	4772
1981	4666	2035	4719	2089	4773
1982	4667	2036	4720	2090	4774
1983	4668	2037	4721	2091	4775
1984	4669	2038	4722	2092	4776
1985	4670	2039	4723	2093	4777
1986	4671	2040	4724	2094	4778

TABLE 2 (cont)

2095	4779	2149	4833	2203	4886
2096	4780	2150	4834	2204	4887
2097	4781	2151	NONE	2205	4888
2098	4782	2152	4835	2206	4889
2099	4783	2153	4836	2207	4890
2100	4784	2154	4837	2208	4891
2101	4785	2155	4838	2209	4892
2102	4786	2156	4839	2210	4893
2103	4787	2157	4840	2211	4894
2104	4788	2158	4841	2212	4895
2105	4789	2159	4842	2213	4896
2106	4790	2160	4843	2214	4897
2107	4791	2161	4844	2215	4898
2108	4792	2162	4845	2216	4899
2109	4793	2163	4846	2217	4900
2110	4794	2164	4847	2218	4901
2111	4795	2165	4848	2219	4902
2112	4796	2166	4849	2220	4903
2113	4797	2167	4850	2221	4904
2114	4798	2168	4851	2222	4905
2115	4799	2169	4852	2223	4906
2116	4800	2170	4853	2224	4907
2117	4801	2171	4854	2225	4908
2118	4802	2172	4855	2226	4909
2119	4803	2173	4856	2227	4910
2120	4804	2174	4857	2228	4911
2121	4805	2175	4858	2229	4912
2122	4806	2176	4859	2230	4913
2123	4807	2177	4860	2231	4914
2124	4808	2178	4861	2232	4915
2125	4809	2179	4862	2233	4916
2126	4810	2180	4863	2234	4917
2127	4811	2181	4864	2235	4918
2128	4812	2182	4865	2236	4919
2129	4813	2183	4866	2237	4920
2130	4814	2184	4867	2238	4921
2131	4815	2185	4868	2239	4922
2132	4816	2186	4869	2240	4923
2133	4817	2187	4870	2241	4924
2134	4818	2188	4871	2242	4925
2135	4819	2189	4872	2243	4926
2136	4820	2190	4873	2244	4927
2137	4821	2191	4874	2245	4928
2138	4822	2192	4875	2246	4929
2139	4823	2193	4876	2247	4930
2140	4824	2194	4877	2248	NONE
2141	4825	2195	4878	2249	4931
2142	4826	2196	4879	2250	4932
2143	4827	2197	4880	2251	4933
2144	4828	2198	4881	2252	4934
2145	4829	2199	4882	2253	4935
2146	4830	2200	4883	2254	4936
2147	4831	2201	4884	2255	4937
2148	4832	2202	4885	2256	4938

TABLE 2 (cont)

2257	4939	2311	4993	2365	5046
2258	4940	2312	4994	2366	5047
2259	4941	2313	4995	2367	5048
2260	4942	2314	4996	2368	5049
2261	4943	2315	4997	2369	5050
2262	4944	2316	4998	2370	5051
2263	4945	2317	4999	2371	NONE
2264	4946	2318	5000	2372	5052
2265	4947	2319	5001	2373	5053
2266	4948	2320	5002	2374	5054
2267	4949	2321	5003	2375	5055
2268	4950	2322	5004	2376	5056
2269	4951	2323	5005	2377	5057
2270	4952	2324	5006	2378	5058
2271	4953	2325	5007	2379	5059
2272	4954	2326	5008	2380	5060
2273	4955	2327	5009	2381	5061
2274	4956	2328	5010	2382	5062
2275	4957	2329	5011	2383	5063
2276	4958	2330	5012	2384	5064
2277	4959	2331	5013	2385	5065
2278	4960	2332	5014	2386	5066
2279	4961	2333	5015	2387	5067
2280	4962	2334	5016	2388	5068
2281	4963	2335	5017	2389	5069
2282	4964	2336	5018	2390	5070
2283	4965	2337	5019	2391	5071
2284	4966	2338	5020	2392	5072
2285	4967	2339	5021	2393	5073
2286	4968	2340	NONE	2394	5074
2287	4969	2341	5022	2395	5075
2288	4970	2342	5023	2396	5076
2289	4971	2343	5024	2397	5077
2290	4972	2344	5025	2398	5078
2291	4973	2345	5026	2399	5079
2292	4974	2346	5027	2400	5080
2293	4975	2347	5028	2401	5081
2294	4976	2348	5029	2402	5082
2295	4977	2349	5030	2403	5083
2296	4978	2350	5031	2404	5084
2297	4979	2351	5032	2405	5085
2298	4980	2352	5033	2406	5086
2299	4981	2353	5034	2407	5087
2300	4982	2354	5035	2408	5088
2301	4983	2355	5036	2409	5089
2302	4984	2356	5037	2410	5090
2303	4985	2357	5038	2411	5091
2304	4986	2358	5039	2412	5092
2305	4987	2359	5040	2413	5093
2306	4988	2360	5041	2414	5094
2307	4989	2361	5042	2415	5095
2308	4990	2362	5043	2416	5096
2309	4991	2363	5044	2417	5097
2310	4992	2364	5045	2418	5098

TABLE 2 (cont)

2419	5099	2473	5151	2527	5205
2420	5100	2474	5152	2528	5206
2421	5101	2475	5153	2529	5207
2422	5102	2476	5154	2530	5208
2423	5103	2477	5155	2531	5209
2424	5104	2478	5156	2532	5210
2425	5105	2479	5157	2533	5211
2426	5106	2480	5158	2534	5212
2427	5107	2481	5159	2535	5213
2428	5108	2482	5160	2536	5214
2429	5109	2483	5161	2537	5215
2430	5110	2484	5162	2538	5216
2431	5111	2485	5163	2539	5217
2432	5112	2486	5164	2540	5218
2433	5113	2487	5165	2541	5219
2434	5114	2488	5166	2542	5220
2435	5115	2489	5167	2543	5221
2436	5116	2490	5168	2544	5222
2437	5117	2491	5169	2545	5223
2438	5118	2492	5170	2546	5224
2439	5119	2493	5171	2547	5225
2440	5120	2494	5172	2548	5226
2441	5121	2495	5173	2549	5227
2442	5122	2496	5174	2550	5228
2443	NONE	2497	5175	2551	5229
2444	5123	2498	5176	2552	5230
2445	5124	2499	5177	2553	5231
2446	5125	2500	5178	2554	5232
2447	5126	2501	5179	2555	5233
2448	5127	2502	5180	2556	5234
2449	5128	2503	5181	2557	5235
2450	5129	2504	5182	2558	5236
2451	5130	2505	5183	2559	5237
2452	5131	2506	5184	2560	5238
2453	5132	2507	5185	2561	5239
2454	5133	2508	5186	2562	5240
2455	5134	2509	5187	2563	5241
2456	5135	2510	5188	2564	5242
2457	5136	2511	5189	2565	5243
2458	5137	2512	5190	2566	5244
2459	5138	2513	5191	2567	5245
2460	5139	2514	5192	2568	5246
2461	5140	2515	5193	2569	5247
2462	5141	2516	5194	2570	5248
2463	5142	2517	5195	2571	5249
2464	5143	2518	5196	2572	5250
2465	5144	2519	5197	2573	5251
2466	5145	2520	5198	2574	5252
2467	5146	2521	5199	2575	5253
2468	5147	2522	5200	2576	5254
2469	NONE	2523	5201	2577	5255
2470	5148	2524	5202	2578	5256
2471	5149	2525	5203	2579	5257
2472	5150	2526	5204	2580	5258

TABLE 2 (cont)

2581	5259	2635	5312	2689	5365
2582	5260	2636	5313	2690	5366
2583	5261	2637	5314	2691	5367
2584	5262	2638	5315	2692	5368
2585	5263	2639	5316	2693	5369
2586	5264	2640	5317	2694	5370
2587	5265	2641	5318	2695	5371
2588	5266	2642	5319	2696	5372
2589	5267	2643	5320	2697	5373
2590	5268	2644	5321	2698	5374
2591	5269	2645	5322	2699	5375
2592	5270	2646	5323	2700	5376
2593	5271	2647	5324	2701	5377
2594	5272	2648	5325	2702	5378
2595	5273	2649	5326	2703	5379
2596	5274	2650	5327		
2597	5275	2651	5328		
2598	5276	2652	5329		
2599	NONE	2653	5330		
2600	5277	2654	5331		
2601	5278	2655	5332		
2602	5279	2656	5333		
2603	5280	2657	5334		
2604	5281	2658	5335		
2605	5282	2659	5336		
2606	5283	2660	5337		
2607	5284	2661	5338		
2608	5285	2662	5339		
2609	5286	2663	5340		
2610	5287	2664	5341		
2611	5288	2665	5342		
2612	5289	2666	5343		
2613	5290	2667	5344		
2614	5291	2668	5345		
2615	5292	2669	5346		
2616	5293	2670	5347		
2617	5294	2671	5348		
2618	5295	2672	5349		
2619	5296	2673	5350		
2620	5297	2674	5351		
2621	5298	2675	5352		
2622	5299	2676	5353		
2623	5300	2677	5354		
2624	5301	2678	5355		
2625	5302	2679	5356		
2626	5303	2680	5357		
2627	5304	2681	NONE		
2628	5305	2682	5358		
2629	5306	2683	5359		
2630	5307	2684	5360		
2631	5308	2685	5361		
2632	5309	2686	5362		
2633	5310	2687	5363		
2634	5311	2688	5364		

TABLE 3

COLD RESPONSIVE SEQUENCES

SEQ ID NO:	AFFYMETRIX ID NO:	SEQ ID NO:	AFFYMETRIX ID NO:	SEQ ID NO:	AFFYMETRIX ID NO:
1	11991_G_AT	50	12269_S_AT	98	12550_S_AT
2	11992_AT	51	12270_AT		17103_S_AT
3	11997_AT	52	12284_AT	99	12552_AT
4	11998_AT	53	12287_S_AT	100	12555_S_AT
5	12001_AT		17570_G_AT	101	12576_S_AT
6	12006_S_AT	54	12293_AT	102	12581_S_AT
7	12007_AT	55	12294_S_AT		16645_S_AT
8	12009_AT	56	12300_AT	103	12587_AT
9	12018_AT	57	12307_AT	104	12597_AT
10	12022_AT	58	12312_AT	105	12602_AT
11	12026_AT	59	12315_AT	106	12610_AT
12	12031_AT	60	12324_I_AT	107	12631_AT
13	12047_AT	61	12331_S_AT	108	12646_AT
14	12051_AT	62	12336_AT	109	12649_AT
15	12052_AT	63	12344_AT	110	12650_AT
16	12053_AT	64	12348_AT	111	12653_AT
17	12060_AT	65	12353_AT	112	12661_AT
18	12072_AT	66	12359_S_AT	113	12666_AT
19	12074_AT	67	12372_AT	114	12674_AT
20	12102_AT	68	12374_I_AT	115	12675_S_AT
21	12112_AT		12726_F_AT	116	12678_I_AT
22	12117_AT	69	12390_AT	117	12681_S_AT
23	12125_AT	70	12395_S_AT	118	12688_AT
24	12130_AT	71	12405_AT	119	12702_AT
25	12143_AT	72	12408_AT	120	12705_F_AT
26	12145_S_AT	73	12410_G_AT	121	12736_F_AT
27	12149_AT	74	12419_AT	122	12737_F_AT
28	12156_AT	75	12427_AT	123	12758_AT
29	12163_AT	76	12431_AT	124	12760_G_AT
30	12166_I_AT	77	12436_AT	125	12762_R_AT
31	12167_AT	78	12438_AT	126	12764_F_AT
32	12169_I_AT	79	12443_S_AT	127	12766_AT
33	12175_AT	80	12447_AT		15115_F_AT
34	12176_AT	81	12450_S_AT	128	12767_AT
35	12179_AT	82	12452_AT	129	12768_AT
36	12187_AT	83	12474_AT	130	12772_AT
	15920_I_AT	84	12477_AT	131	12775_AT
37	12195_AT	85	12491_AT	132	12776_AT
38	12196_AT	86	12497_AT	133	12788_AT
39	12198_AT	87	12500_S_AT	134	12793_AT
40	12200_AT	88	12503_AT	135	12794_AT
41	12202_AT	89	12515_AT	136	12802_AT
42	12214_G_AT	90	12516_S_AT	137	12809_G_AT
43	12219_AT	91	12523_AT	138	12812_AT
44	12224_AT	92	12526_AT	139	12815_AT
45	12226_AT	93	12527_AT	140	12816_AT
46	12233_AT	94	12532_AT	141	12818_AT
47	12240_AT	95	12534_G_AT	142	12824_S_AT
48	12253_G_AT	96	12544_AT	143	12828_S_AT
49	12256_AT	97	12549_S_AT	144	12842_S_AT

TABLE 3 (cont)

145	12846_S_AT	194	13086_R_AT	238	13285_S_AT
146	12858_AT	195	13087_AT	239	13288_S_AT
147	12860_S_AT	196	13090_AT		17043_S_AT
148	12861_S_AT	197	13092_S_AT	240	13292_S_AT
149	12881_S_AT		16950_S_AT	241	13296_S_AT
	17600_S_AT	198	13098_AT	242	13297_S_AT
150	12889_S_AT	199	13100_AT	243	13299_S_AT
151	12901_S_AT	200	13103_AT		15166_S_AT
152	12902_AT	201	13105_AT	244	13332_AT
153	12904_S_AT	202	13107_S_AT	245	13347_AT
154	12905_S_AT	203	13108_AT	246	13351_AT
155	12908_S_AT	204	13109_AT	247	13352_AT
156	12910_S_AT	205	13114_AT	248	13355_AT
	16385_S_AT	206	13118_F_AT	249	13404_AT
157	12914_S_AT	207	13119_AT	250	13422_AT
	15783_S_AT	208	13120_AT	251	13459_AT
	17645_S_AT	209	13123_AT	252	13460_AT
158	12916_S_AT	210	13128_AT	253	13461_S_AT
159	12923_S_AT	211	13133_S_AT	254	13467_AT
160	12926_S_AT		17430_S_AT	255	13488_AT
161	12927_S_AT	212	13135_S_AT	256	13523_S_AT
162	12931_S_AT	213	13139_AT	257	13529_AT
163	12937_R_AT	214	13140_AT	258	13539_I_AT
164	12941_G_AT	215	13143_AT		14631_S_AT
165	12942_AT	216	13151_G_AT	259	13541_AT
166	12947_AT	217	13160_AT	260	13542_AT
167	12949_AT	218	13161_AT	261	13545_S_AT
168	12953_AT	219	13162_AT	262	13552_AT
169	12956_I_AT	220	13165_AT	263	13556_I_AT
170	12959_AT	221	13166_AT	264	13561_AT
171	12966_S_AT	222	13167_AT	265	13563_S_AT
172	12975_AT	223	13179_AT	266	13567_AT
173	12983_AT	224	13181_AT	267	13568_AT
174	12984_AT	225	13185_AT	268	13571_AT
175	12987_S_AT	226	13193_S_AT	269	13575_AT
176	12994_S_AT	227	13213_S_AT	270	13576_AT
177	13002_AT		16004_S_AT	271	13583_AT
178	13009_I_AT	228	13219_S_AT	272	13598_AT
179	13011_AT		20288_G_AT	273	13601_AT
180	13018_AT	229	13220_S_AT	274	13604_AT
181	13023_AT		13221_AT	275	13613_AT
182	13024_AT		18929_S_AT	276	13616_S_AT
183	13034_S_AT	230	13233_AT		16544_S_AT
184	13046_G_AT		14301_S_AT	277	13617_AT
185	13048_S_AT	231	13243_R_AT	278	13618_S_AT
	13495_S_AT	232	13254_S_AT	279	13619_AT
186	13054_AT	233	13260_S_AT	280	13621_G_AT
187	13067_S_AT		15660_S_AT	281	13623_R_AT
188	13068_AT	234	13273_S_AT	282	13629_S_AT
189	13073_S_AT		16105_S_AT	283	13631_AT
190	13078_S_AT	235	13274_S_AT	284	13635_AT
191	13079_AT		17077_S_AT	285	13646_AT
192	13081_S_AT	236	13276_S_AT	286	13650_AT
193	13083_AT	237	13278_F_AT	287	13653_AT

TABLE 3 (cont)

288	13655_AT	332	13989_AT	383	14393_AT
289	13656_AT		20674_S_AT	384	14421_AT
290	13657_AT	333	14010_AT	385	14436_AT
291	13666_S_AT	334	14013_AT	386	14448_AT
	17083_S_AT	335	14014_AT	387	14450_AT
292	13667_S_AT	336	14019_AT	388	14454_AT
293	13669_S_AT	337	14021_R_AT	389	14459_AT
	17074_S_AT	338	14025_S_AT	390	14478_AT
294	13670_S_AT		18909_S_AT	391	14482_AT
	15206_S_AT	339	14027_AT	392	14485_AT
295	13671_S_AT	340	14030_AT	393	14492_S_AT
	16805_S_AT	341	14044_AT	394	14505_AT
296	13678_S_AT	342	14048_AT	395	14510_AT
297	13688_S_AT	343	14056_AT	396	14511_AT
298	13690_S_AT	344	14057_AT	397	14517_AT
	16065_S_AT	345	14058_AT	398	14519_AT
299	13691_S_AT	346	14059_AT	399	14525_S_AT
	16117_S_AT	347	14061_AT	400	14527_AT
300	13692_S_AT	348	14068_S_AT	401	14534_S_AT
	16118_S_AT	349	14072_AT	402	14538_R_AT
301	13700_AT	350	14073_AT	403	14554_AT
302	13704_S_AT	351	14074_AT	404	14558_AT
303	13714_AT	352	14084_AT	405	14559_S_AT
304	13715_AT	353	14095_S_AT	406	14566_AT
305	13724_AT	354	14100_AT	407	14572_AT
306	13748_AT	355	14101_AT	408	14579_AT
307	13759_AT	356	14103_AT	409	14587_AT
308	13767_AT	357	14105_AT	410	14591_AT
309	13785_AT	358	14106_AT	411	14595_AT
310	13803_AT	359	14121_AT	412	14602_AT
311	13850_I_AT	360	14129_S_AT	413	14603_AT
312	13876_AT	361	14133_S_AT	414	14605_AT
313	13880_S_AT	362	14143_AT	415	14620_S_AT
314	13883_AT	363	14145_AT	416	14626_S_AT
315	13887_S_AT	364	14148_AT	417	14630_S_AT
316	13895_AT	365	14186_AT		16559_S_AT
317	13904_S_AT	366	14194_AT	418	14637_S_AT
	18722_S_AT	367	14196_AT		17122_S_AT
318	13906_S_AT	368	14223_AT	419	14642_F_AT
319	13908_S_AT	369	14234_AT	420	14650_S_AT
	18597_AT	370	14236_AT		15150_S_AT
320	13923_AT	371	14251_F_AT	421	14654_S_AT
321	13927_AT	372	14252_F_AT	422	14667_S_AT
322	13932_AT	373	14270_AT		18299_S_AT
323	13935_AT	374	14298_G_AT	423	14669_S_AT
324	13940_AT		17581_G_AT		16136_S_AT
325	13949_S_AT	375	14303_S_AT	424	14672_S_AT
326	13954_G_AT	376	14312_AT	425	14679_S_AT
327	13971_S_AT	377	14316_AT	426	14682_L_AT
328	13973_AT	378	14339_AT	427	14689_AT
329	13983_AT	379	14366_AT	428	14697_G_AT
330	13985_S_AT	380	14369_AT		16902_AT
331	13987_S_AT	381	14388_AT	429	14701_S_AT
	18738_F_AT	382	14392_G_AT		14734_S_AT

TABLE 3 (cont)

430	14703_AT	483	15130_S_AT	534	15489_AT
431	14711_S_AT	484	15131_S_AT	535	15490_AT
432	14712_S_AT	485	15132_S_AT	536	15503_AT
	20530_S_AT		17585_S_AT	537	15505_AT
433	14713_S_AT	486	15139_S_AT	538	15510_R_AT
434	14715_S_AT	487	15143_S_AT	539	15512_AT
435	14728_S_AT	488	15146_S_AT	540	15514_AT
436	14731_S_AT	489	15159_S_AT	541	15515_R_AT
437	14781_AT		15160_S_AT	542	15517_S_AT
438	14797_S_AT	490	15162_S_AT	543	15518_AT
439	14800_AT	491	15167_S_AT	544	15529_AT
440	14809_AT	492	15171_S_AT	545	15534_F_AT
441	14843_AT	493	15174_F_AT	546	15538_AT
442	14847_AT	494	15178_S_AT	547	15541_AT
443	14872_AT	495	15185_S_AT	548	15543_AT
444	14886_AT		18023_S_AT	549	15544_AT
445	14896_AT	496	15188_S_AT	550	15551_AT
446	14900_AT	497	15193_S_AT	551	15574_S_AT
447	14908_AT	498	15196_S_AT	552	15576_S_AT
448	14912_AT	499	15197_S_AT	553	15577_S_AT
449	14914_AT	500	15201_F_AT	554	15578_S_AT
450	14942_AT	501	15213_S_AT	555	15583_S_AT
451	14945_AT	502	15243_AT	556	15588_S_AT
452	14955_AT	503	15256_AT	557	15595_S_AT
453	14957_S_AT	504	15270_AT	558	15600_S_AT
454	14958_AT	505	15319_AT	559	15602_F_AT
455	14965_AT	506	15325_AT	560	15608_S_AT
456	14974_AT	507	15337_AT	561	15613_S_AT
457	14980_AT	508	15341_AT	562	15616_S_AT
458	14981_AT	509	15343_AT	563	15618_S_AT
459	14984_S_AT	510	15348_AT	564	15620_S_AT
460	14995_AT	511	15350_AT	565	15627_S_AT
461	15004_AT	512	15355_S_AT	566	15634_S_AT
462	15009_AT	513	15367_AT		16125_S_AT
463	15010_AT	514	15372_AT		18046_S_AT
464	15024_AT	515	15379_AT	567	15637_S_AT
465	15026_AT	516	15381_AT	568	15639_S_AT
466	15036_R_AT	517	15383_AT	569	15642_S_AT
467	15054_AT	518	15384_AT	570	15643_S_AT
468	15056_AT	519	15385_AT	571	15651_F_AT
469	15057_AT	520	15387_AT	572	15652_S_AT
470	15066_AT	521	15410_AT	573	15665_S_AT
471	15073_AT	522	15417_S_AT	574	15667_S_AT
472	15081_AT	523	15422_AT		18610_S_AT
473	15083_AT	524	15423_AT	575	15668_S_AT
474	15091_AT	525	15431_AT	576	15671_S_AT
475	15097_S_AT	526	15433_AT	577	15675_S_AT
476	15101_S_AT	527	15452_AT	578	15679_S_AT
477	15102_S_AT	528	15464_AT	579	15685_S_AT
478	15107_S_AT	529	15468_AT	580	15687_F_AT
479	15112_S_AT	530	15471_AT	581	15688_S_AT
480	15116_F_AT	531	15472_AT	582	15689_S_AT
481	15118_S_AT	532	15475_S_AT	583	15692_S_AT
482	15122_S_AT	533	15485_AT	584	15694_S_AT

TABLE 3 (cont)

585	15712_S_AT	634	16089_S_AT	686	16496_S_AT
586	15808_AT	635	16090_S_AT	687	16499_AT
587	15845_AT	636	16102_S_AT	688	16510_AT
588	15848_AT	637	16103_S_AT	689	16511_AT
589	15850_AT	638	16108_S_AT	690	16512_S_AT
	20406_G_AT	639	16112_S_AT		18085_R_AT
590	15858_AT	640	16134_S_AT	691	16514_AT
591	15862_AT	641	16137_S_AT	692	16516_AT
592	15868_AT	642	16138_S_AT	693	16517_AT
593	15878_AT	643	16140_S_AT	694	16526_AT
594	15894_AT	644	16143_S_AT	695	16528_AT
595	15900_AT	645	16145_S_AT	696	16531_S_AT
596	15901_AT	646	16148_S_AT	697	16535_S_AT
597	15902_AT	647	16151_S_AT	698	16537_S_AT
598	15912_AT	648	16155_S_AT	699	16538_S_AT
599	15913_AT	649	16158_F_AT	700	16543_S_AT
600	15928_AT	650	16160_F_AT	701	16550_S_AT
601	15940_AT	651	16162_S_AT	702	16554_S_AT
602	15941_AT	652	16168_S_AT	703	16567_S_AT
603	15945_AT	653	16169_S_AT	704	16571_S_AT
604	15948_S_AT	654	16171_S_AT	705	16576_F_AT
605	15956_AT	655	16172_S_AT	706	16577_S_AT
606	15960_AT	656	16184_AT	707	16579_S_AT
	16466_S_AT	657	16192_AT	708	16580_S_AT
607	15976_AT	658	16222_AT	709	16583_S_AT
608	15978_AT	659	16242_AT	710	16584_S_AT
609	15986_S_AT	660	16244_AT		18706_S_AT
610	15990_AT	661	16250_AT	711	16593_S_AT
611	16009_S_AT	662	16286_AT	712	16595_S_AT
612	16015_AT	663	16288_AT	713	16598_S_AT
613	16019_AT	664	16294_S_AT	714	16604_S_AT
614	16024_AT	665	16296_AT	715	16605_S_AT
615	16034_AT	666	16297_AT	716	16610_S_AT
616	16036_I_AT	667	16325_AT	717	16611_S_AT
	18729_AT	668	16346_S_AT	718	16614_S_AT
617	16039_S_AT	669	16357_AT	719	16617_S_AT
618	16040_AT	670	16380_AT	720	16618_S_AT
619	16042_S_AT	671	16382_AT	721	16620_S_AT
620	16047_AT	672	16393_S_AT	722	16621_S_AT
621	16049_S_AT	673	16402_S_AT	723	16631_S_AT
622	16051_S_AT	674	16411_S_AT	724	16634_S_AT
623	16055_S_AT	675	16442_S_AT	725	16635_S_AT
624	16059_S_AT	676	16446_AT	726	16636_S_AT
625	16062_S_AT	677	16448_G_AT	727	16639_S_AT
626	16066_S_AT	678	16453_S_AT	728	16640_S_AT
627	16069_S_AT	679	16457_S_AT	729	16650_S_AT
628	16074_S_AT	680	16465_AT	730	16652_S_AT
629	16076_S_AT		16916_S_AT	731	16654_AT
630	16077_S_AT	681	16470_S_AT	732	16672_AT
	17579_S_AT		18735_S_AT	733	16673_AT
631	16079_S_AT	682	16481_S_AT	734	16687_S_AT
632	16084_S_AT	683	16486_AT	735	16747_AT
	17998_S_AT	684	16487_AT	736	16753_AT
633	16087_S_AT	685	16488_AT	737	16768_AT

TABLE 3 (cont)

738	16777_AT	790	17123_S_AT	843	17562_AT
739	16784_AT	791	17129_S_AT	844	17564_S_AT
740	16807_AT	792	17132_AT		19361_S_AT
741	16811_AT	793	17166_AT	845	17565_S_AT
742	16845_AT	794	17206_AT	846	17568_AT
743	16894_AT	795	17207_AT	847	17573_AT
744	16899_AT	796	17215_AT	848	17577_G_AT
745	16911_AT	797	17237_AT	849	17578_AT
746	16920_AT	798	17247_AT	850	17596_AT
747	16921_AT	799	17254_AT	851	17627_AT
748	16924_S_AT	800	17286_AT	852	17631_AT
749	16926_S_AT	801	17288_S_AT	853	17632_AT
750	16931_S_AT	802	17292_AT	854	17672_AT
751	16934_S_AT	803	17300_AT	855	17675_AT
752	16937_AT	804	17303_S_AT	856	17677_AT
753	16938_AT	805	17318_AT	857	17732_AT
754	16942_AT	806	17319_AT	858	17743_AT
755	16943_S_AT	807	17322_AT	859	17748_AT
	18231_AT	808	17323_AT	860	17782_AT
756	16949_S_AT	809	17332_S_AT	861	17823_S_AT
757	16952_S_AT	810	17374_AT	862	17841_AT
758	16956_AT	811	17381_AT	863	17849_S_AT
759	16962_S_AT	812	17388_AT	864	17852_G_AT
760	16965_S_AT	813	17392_S_AT	865	17857_AT
761	16970_S_AT	814	17405_AT	866	17865_AT
	18010_S_AT	815	17415_AT	867	17882_AT
762	16977_AT	816	17418_S_AT	868	17885_AT
763	16984_AT	817	17420_AT	869	17900_S_AT
764	16996_S_AT	818	17423_S_AT	870	17910_AT
765	16997_AT	819	17426_AT	871	17911_AT
766	17000_AT	820	17427_AT	872	17916_AT
767	17005_AT	821	17429_S_AT	873	17917_S_AT
768	17010_S_AT	822	17431_AT	874	17918_AT
769	17017_S_AT	823	17439_G_AT	875	17921_S_AT
770	17031_S_AT	824	17457_AT	876	17922_AT
771	17033_S_AT	825	17458_AT	877	17926_S_AT
772	17053_S_AT	826	17462_S_AT	878	17933_AT
773	17055_S_AT	827	17463_AT	879	17935_AT
774	17063_S_AT	828	17465_AT	880	17956_I_AT
775	17068_S_AT	829	17466_S_AT	881	17966_AT
776	17070_S_AT	830	17475_AT	882	17967_AT
777	17075_S_AT	831	17479_AT	883	17970_I_AT
778	17084_S_AT	832	17482_S_AT	884	17978_S_AT
779	17087_S_AT	833	17495_S_AT		20635_S_AT
780	17092_S_AT	834	17508_S_AT	885	17986_S_AT
781	17095_S_AT	835	17522_S_AT	886	17993_AT
782	17096_S_AT	836	17523_S_AT	887	18001_AT
783	17102_S_AT	837	17537_S_AT	888	18003_AT
784	17105_S_AT	838	17538_S_AT	889	18004_AT
785	17109_S_AT	839	17539_S_AT	890	18005_AT
786	17110_S_AT	840	17546_S_AT	891	18029_G_AT
787	17113_S_AT		18694_S_AT		18030_I_AT
788	17115_S_AT	841	17557_S_AT	892	18040_S_AT
789	17116_S_AT	842	17560_S_AT	893	18045_AT

TABLE 3 (cont)

894	18064_R_AT	947	18580_AT	1001	18889_AT
895	18065_R_AT	948	18581_AT	1002	18892_S_AT
896	18074_AT	949	18584_AT	1003	18901_AT
897	18076_S_AT	950	18587_S_AT	1004	18911_AT
898	18077_AT	951	18588_AT	1005	18917_I_AT
899	18081_AT	952	18591_AT	1006	18939_AT
900	18154_S_AT	953	18592_S_AT	1007	18947_I_AT
	18365_S_AT	954	18600_AT	1008	18950_AT
901	18165_AT	955	18601_S_AT	1009	18951_S_AT
902	18174_AT	956	18607_S_AT	1010	18954_AT
903	18176_AT	957	18611_AT	1011	18956_AT
904	18194_I_AT	958	18616_AT	1012	18959_AT
905	18197_AT	959	18622_G_AT	1013	18966_AT
906	18198_AT	960	18623_AT	1014	18974_AT
907	18213_AT	961	18628_AT	1015	18976_AT
908	18219_AT	962	18631_AT	1016	18980_AT
909	18221_AT	963	18635_AT	1017	18989_S_AT
910	18222_AT	964	18636_AT	1018	18994_AT
911	18226_S_AT	965	18638_AT	1019	19030_AT
912	18232_AT	966	18652_AT	1020	19039_AT
913	18237_AT	967	18657_AT	1021	19049_AT
914	18241_AT	968	18659_AT	1022	19083_AT
915	18257_AT	969	18660_S_AT	1023	19115_AT
916	18258_S_AT	970	18667_AT	1024	19117_S_AT
917	18269_S_AT	971	18675_AT	1025	19122_AT
918	18274_S_AT	972	18684_AT	1026	19125_S_AT
919	18275_AT	973	18686_S_AT	1027	19127_AT
920	18278_AT	974	18688_S_AT	1028	19130_AT
921	18282_AT	975	18693_S_AT	1029	19144_AT
922	18283_AT	976	18698_S_AT	1030	19157_S_AT
923	18290_AT	977	18705_AT	1031	19178_AT
924	18291_AT	978	18707_AT	1032	19190_G_AT
925	18306_AT	979	18708_AT	1033	19198_AT
926	18316_AT	980	18726_S_AT	1034	19202_AT
927	18317_AT	981	18727_AT	1035	19209_S_AT
928	18327_S_AT	982	18732_I_AT	1036	19211_AT
929	18337_S_AT	983	18736_AT	1037	19218_AT
930	18339_AT	984	18750_F_AT	1038	19222_AT
931	18347_S_AT	985	18754_AT	1039	19226_G_AT
932	18383_AT	986	18778_AT	1040	19229_AT
933	18390_AT	987	18806_S_AT	1041	19230_AT
934	18439_S_AT	988	18823_S_AT	1042	19232_S_AT
935	18465_S_AT	989	18829_AT	1043	19285_AT
936	18487_AT	990	18835_AT	1044	19326_AT
937	18508_S_AT	991	18844_AT	1045	19332_AT
938	18512_AT	992	18859_AT	1046	19346_AT
939	18543_AT	993	18864_AT	1047	19347_AT
940	18544_AT	994	18866_AT	1048	19362_AT
941	18552_AT	995	18880_AT	1049	19363_AT
942	18555_AT	996	18883_G_AT	1050	19364_AT
943	18556_AT	997	18885_AT	1051	19367_AT
944	18561_AT	998	18886_AT	1052	19373_AT
945	18567_AT	999	18887_AT	1053	19381_AT
946	18573_AT	1000	18888_AT	1054	19382_AT

TABLE 3 (cont)

1055	19384_AT	1109	19833_S_AT	1163	20093_I_AT
1056	19401_AT	1110	19834_AT	1164	20099_AT
1057	19406_AT	1111	19836_AT	1165	20100_AT
1058	19413_AT	1112	19841_AT	1166	20113_S_AT
1059	19416_AT	1113	19845_G_AT	1167	20117_AT
1060	19426_S_AT	1114	19854_AT	1168	20123_AT
1061	19439_AT	1115	19855_AT	1169	20127_S_AT
1062	19441_S_AT	1116	19866_AT	1170	20129_AT
1063	19442_AT	1117	19867_AT	1171	20150_AT
1064	19448_S_AT	1118	19870_S_AT	1172	20154_AT
1065	19454_AT	1119	19871_AT	1173	20156_AT
1066	19462_S_AT	1120	19872_AT	1174	20165_AT
1067	19464_AT	1121	19875_S_AT	1175	20173_AT
1068	19470_AT	1122	19876_AT	1176	20178_S_AT
1069	19483_AT	1123	19879_S_AT	1177	20183_AT
1070	19489_S_AT	1124	19881_AT	1178	20188_AT
1071	19513_AT	1125	19897_S_AT	1179	20189_AT
1072	19548_AT	1126	19903_AT	1180	20197_AT
1073	19562_AT	1127	19905_AT	1181	20210_G_AT
1074	19563_S_AT	1128	19906_AT	1182	20213_AT
1075	19567_AT	1129	19907_AT	1183	20229_AT
1076	19581_AT	1130	19910_AT	1184	20232_S_AT
1077	19589_S_AT	1131	19913_AT	1185	20255_AT
1078	19595_S_AT	1132	19920_S_AT	1186	20257_AT
1079	19606_AT	1133	19932_AT	1187	20262_AT
1080	19623_AT	1134	19939_AT	1188	20275_AT
1081	19624_AT	1135	19945_AT	1189	20278_S_AT
1082	19627_S_AT	1136	19947_AT	1190	20282_S_AT
1083	19636_AT	1137	19951_AT	1191	20284_AT
1084	19652_AT	1138	19956_AT	1192	20293_AT
1085	19655_AT	1139	19962_AT	1193	20294_AT
1086	19657_S_AT	1140	19963_AT	1194	20312_S_AT
1087	19658_AT	1141	19969_AT	1195	20315_I_AT
1088	19660_AT	1142	19970_S_AT	1196	20330_S_AT
1089	19665_S_AT	1143	19971_AT	1197	20331_AT
1090	19667_AT	1144	19972_AT	1198	20350_S_AT
1091	19671_AT	1145	19981_AT	1199	20354_S_AT
1092	19677_AT	1146	19990_AT	1200	20355_AT
1093	19686_AT	1147	19996_AT	1201	20360_AT
1094	19689_AT	1148	20003_S_AT	1202	20363_AT
1095	19690_S_AT	1149	20009_S_AT	1203	20369_S_AT
1096	19695_AT	1150	20013_AT	1204	20378_G_AT
1097	19698_AT	1151	20018_AT	1205	20383_AT
1098	19700_S_AT	1152	20024_S_AT	1206	20384_AT
1099	19708_AT	1153	20027_AT	1207	20387_AT
1100	19717_AT	1154	20045_AT	1208	20393_AT
1101	19726_S_AT	1155	20047_AT	1209	20396_AT
1102	19744_AT	1156	20048_AT	1210	20399_AT
1103	19752_S_AT	1157	20050_AT	1211	20409_G_AT
1104	19759_AT	1158	20051_AT	1212	20412_S_AT
1105	19782_AT	1159	20058_AT	1213	20413_AT
1106	19803_S_AT	1160	20067_AT	1214	20439_AT
1107	19828_AT	1161	20068_AT	1215	20440_AT
1108	19831_I_AT	1162	20069_AT	1216	20444_AT

TABLE 3 (cont)

1217	20445_AT
1218	20449_AT
1219	20456_AT
1220	20462_AT
1221	20471_AT
1222	20474_AT
1223	20495_S_AT
1224	20499_AT
1225	20501_AT
1226	20511_AT
1227	20515_S_AT
1228	20516_AT
1229	20517_AT
1230	20518_AT
1231	20520_S_AT
1232	20536_S_AT
1233	20538_S_AT
1234	20539_S_AT
1235	20558_AT
1236	20561_AT
1237	20567_AT
1238	20571_AT
1239	20582_S_AT
1240	20586_I_AT
1241	20590_AT
1242	20592_AT
1243	20594_AT
1244	20608_S_AT
1245	20612_S_AT
1246	20616_AT
1247	20620_G_AT
1248	20637_AT
1249	20643_AT
1250	20649_AT
1251	20651_AT
1252	20654_S_AT
1253	20670_AT
1254	20684_AT
1255	20685_AT
1256	20693_AT
1257	20701_S_AT
1258	20704_AT
1259	20705_AT
1260	20715_AT
1261	20719_AT

TABLE 4: 2X UP IN COLD, ONLY

11997_at	12688_at	13274_s_at	14145_at	15083_at	15639_s_at
11998_at	12701_i_at	13278_f_at	14170_at	15084_at	15641_s_at
12018_at	12702_at	13279_s_at	14186_at	15096_at	15660_s_at
12031_at	12719_f_at	13285_s_at	14196_at	15101_s_at	15665_s_at
12047_at	12726_f_at	13288_s_at	14227_at	15105_s_at	15687_f_at
12051_at	12736_f_at	13292_s_at	14234_at	15112_s_at	15694_s_at
12053_at	12754_g_at	13297_s_at	14250_r_at	15115_f_at	15712_s_at
12060_at	12762_r_at	13299_s_at	14270_at	15116_f_at	15783_s_at
12072_at	12766_at	13332_at	14298_g_at	15122_s_at	15808_at
12074_at	12767_at	13351_at	14303_s_at	15126_s_at	15837_at
12102_at	12768_at	13352_at	14312_at	15131_s_at	15850_at
12112_at	12773_at	13422_at	14339_at	15132_s_at	15862_at
12117_at	12788_at	13435_at	14388_at	15137_s_at	15868_at
12130_at	12802_at	13461_s_at	14393_at	15144_s_at	15878_at
12145_s_at	12860_s_at	13467_at	14511_at	15148_s_at	15901_at
12151_at	12861_s_at	13488_at	14525_s_at	15153_s_at	15912_at
12163_at	12879_s_at	13495_s_at	14527_at	15159_s_at	15920_i_at
12175_at	12891_at	13539_i_at	14534_s_at	15160_s_at	15941_at
12187_at	12914_s_at	13542_at	14554_at	15166_s_at	15945_at
12195_at	12927_s_at	13575_at	14566_at	15174_f_at	15960_at
12219_at	12947_at	13577_s_at	14579_at	15197_s_at	15990_at
12256_at	12956_i_at	13617_at	14591_at	15270_at	16001_at
12269_s_at	12966_s_at	13634_s_at	14595_at	15319_at	16009_s_at
12307_at	12974_at	13656_at	14600_at	15325_at	16010_s_at
12315_at	12987_s_at	13671_s_at	14631_s_at	15337_at	16034_at
12336_at	12994_s_at	13691_s_at	14635_s_at	15341_at	16036_i_at
12349_s_at	12998_at	13700_at	14679_s_at	15343_at	16039_s_at
12353_at	13002_at	13704_s_at	14691_at	15355_s_at	16040_at
12359_s_at	13018_at	13709_s_at	14697_g_at	15367_at	16042_s_at
12390_at	13023_at	13715_at	14709_at	15379_at	16047_at
12395_s_at	13046_g_at	13785_at	14711_s_at	15381_at	16049_s_at
12431_at	13054_at	13803_at	14728_s_at	15410_at	16051_s_at
12436_at	13086_r_at	13812_s_at	14731_s_at	15417_s_at	16062_s_at
12443_s_at	13087_at	13825_s_at	14797_s_at	15422_at	16079_s_at
12447_at	13100_at	13850_i_at	14809_at	15433_at	16087_s_at
12452_at	13109_at	13904_s_at	14843_at	15451_at	16090_s_at
12477_at	13119_at	13908_s_at	14847_at	15452_at	16117_s_at
12503_at	13120_at	13927_at	14872_at	15453_s_at	16118_s_at
12516_s_at	13128_at	13971_s_at	14886_at	15472_at	16137_s_at
12532_at	13134_s_at	13985_s_at	14896_at	15489_at	16155_s_at
12544_at	13140_at	14013_at	14897_at	15490_at	16162_s_at
12561_at	13143_at	14019_at	14900_at	15503_at	16184_at
12602_at	13167_at	14021_r_at	14956_s_at	15510_r_at	16192_at
12610_at	13172_s_at	14028_at	14958_at	15517_s_at	16222_at
12631_at	13178_at	14048_at	14965_at	15518_at	16244_at
12647_s_at	13179_at	14058_at	14984_s_at	15544_at	16250_at
12650_at	13181_at	14059_at	15004_at	15586_s_at	16260_at
12656_at	13187_i_at	14064_at	15010_at	15600_s_at	16286_at
12674_at	13209_s_at	14073_at	15036_r_at	15605_s_at	16296_at
12675_s_at	13219_s_at	14105_at	15040_g_at	15613_s_at	16297_at
12676_s_at	13221_at	14106_at	15046_s_at	15614_s_at	16342_at
12681_s_at	13243_r_at	14126_s_at	15057_at	15616_s_at	16367_i_at
12686_s_at	13260_s_at	14140_at	15073_at	15633_s_at	16411_s_at

TABLE 4 (cont): 2X UP IN COLD, ONLY

16442_s_at	17077_s_at	17978_s_at	18885_at	19689_at	20412_s_at
16465_at	17102_s_at	17999_at	18887_at	19698_at	20413_at
16466_s_at	17109_s_at	18001_at	18888_at	19700_s_at	20432_at
16468_at	17113_s_at	18004_at	18889_at	19707_s_at	20433_at
16486_at	17123_s_at	18012_s_at	18901_at	19708_at	20456_at
16487_at	17128_s_at	18040_s_at	18907_s_at	19713_at	20462_at
16488_at	17129_s_at	18176_at	18917_i_at	19718_at	20471_at
16489_at	17132_at	18194_i_at	18939_at	19744_at	20511_at
16496_s_at	17166_at	18197_at	18947_i_at	19836_at	20515_s_at
16499_at	17206_at	18198_at	18949_at	19839_at	20517_at
16511_at	17237_at	18213_at	18954_at	19840_s_at	20518_at
16517_at	17300_at	18219_at	18959_at	19845_g_at	20529_at
16538_s_at	17319_at	18222_at	18974_at	19854_at	20536_s_at
16554_s_at	17322_at	18231_at	18976_at	19855_at	20538_s_at
16571_s_at	17332_s_at	18232_at	18980_at	19860_at	20539_s_at
16576_f_at	17381_at	18241_at	18989_s_at	19866_at	20576_at
16595_s_at	17388_at	18269_s_at	19019_i_at	19871_at	20582_s_at
16605_s_at	17392_s_at	18272_at	19049_at	19875_s_at	20586_i_at
16610_s_at	17408_at	18282_at	19083_at	19879_s_at	20608_s_at
16620_s_at	17424_at	18298_at	19130_at	19881_at	20649_at
16621_s_at	17429_s_at	18316_at	19156_s_at	19913_at	20651_at
16635_s_at	17457_at	18317_at	19178_at	19939_at	20684_at
16636_s_at	17458_at	18331_s_at	19190_g_at	19945_at	20685_at
16638_s_at	17466_s_at	18347_s_at	19199_at	19947_at	20699_at
16650_s_at	17477_s_at	18383_at	19202_at	19951_at	20705_at
16672_at	17482_s_at	18390_at	19209_s_at	19956_at	20715_at
16673_at	17538_s_at	18455_at	19211_at	19971_at	
16687_s_at	17546_s_at	18465_s_at	19218_at	19976_at	
16747_at	17562_at	18544_at	19229_at	19998_at	
16753_at	17581_g_at	18555_at	19322_at	20003_s_at	
16768_at	17627_at	18556_at	19326_at	20015_at	
16805_s_at	17631_at	18560_at	19359_s_at	20027_at	
16807_at	17632_at	18561_at	19367_at	20051_at	
16845_at	17645_s_at	18571_at	19384_at	20068_at	
16847_at	17672_at	18588_at	19389_at	20093_i_at	
16896_s_at	17675_at	18597_at	19397_at	20117_at	
16899_at	17677_at	18601_s_at	19406_at	20150_at	
16902_at	17693_at	18611_at	19426_s_at	20156_at	
16911_at	17732_at	18623_at	19441_s_at	20165_at	
16914_s_at	17743_at	18635_at	19442_at	20257_at	
16943_s_at	17748_at	18659_at	19470_at	20262_at	
16956_at	17775_at	18660_s_at	19489_s_at	20275_at	
16996_s_at	17782_at	18673_at	19562_at	20282_s_at	
17010_s_at	17841_at	18694_s_at	19577_at	20288_g_at	
17016_s_at	17852_g_at	18705_at	19589_s_at	20293_at	
17032_s_at	17900_s_at	18708_at	19597_s_at	20315_i_at	
17033_s_at	17901_at	18738_f_at	19611_s_at	20330_s_at	
17043_s_at	17911_at	18750_f_at	19624_at	20360_at	
17050_s_at	17921_s_at	18778_at	19657_s_at	20363_at	
17055_s_at	17922_at	18829_at	19667_at	20369_s_at	
17068_s_at	17933_at	18835_at	19671_at	20384_at	
17071_s_at	17967_at	18866_at	19677_at	20393_at	
17075_s_at	17970_i_at	18875_s_at	19686_at	20396_at	

TABLE 5: 2X UP COLD 3 HR, ONLY

12117_at	13671_s_at	15453_s_at	17237_at
12145_s_at	13691_s_at	15489_at	17319_at
12151_at	13785_at	15518_at	17392_s_at
12163_at	13803_at	15588_s_at	17429_s_at
12187_at	13825_s_at	15613_s_at	17477_s_at
12256_at	13904_s_at	15614_s_at	17538_s_at
12315_at	14013_at	15616_s_at	17581_g_at
12349_s_at	14021_r_at	15639_s_at	17627_at
12353_at	14028_at	15641_s_at	17672_at
12359_s_at	14064_at	15660_s_at	17693_at
12544_at	14126_s_at	15687_f_at	17782_at
12602_at	14145_at	15694_s_at	17841_at
12610_at	14170_at	15862_at	17900_s_at
12676_s_at	14196_at	15868_at	17933_at
12686_s_at	14250_r_at	15878_at	17978_s_at
12701_i_at	14298_g_at	15901_at	18001_at
12702_at	14303_s_at	16034_at	18012_s_at
12719_f_at	14339_at	16039_s_at	18198_at
12736_f_at	14527_at	16040_at	18219_at
12754_g_at	14534_s_at	16042_s_at	18241_at
12766_at	14554_at	16047_at	18269_s_at
12767_at	14595_at	16062_s_at	18272_at
12768_at	14635_s_at	16087_s_at	18282_at
12773_at	14679_s_at	16117_s_at	18298_at
12788_at	14691_at	16118_s_at	18383_at
12879_s_at	14697_g_at	16162_s_at	18556_at
12891_at	14709_at	16184_at	18588_at
12947_at	14728_s_at	16222_at	18501_s_at
12966_s_at	14809_at	16250_at	18611_at
12974_at	14896_at	16411_s_at	18694_s_at
12994_s_at	14965_at	16442_s_at	18708_at
13002_at	14984_s_at	16465_at	18738_f_at
13100_at	15046_s_at	16486_at	18778_at
13140_at	15083_at	16488_at	18829_at
13167_at	15096_at	16489_at	18835_at
13172_s_at	15105_s_at	16517_at	18866_at
13179_at	15115_f_at	16571_s_at	18875_s_at
13187_i_at	15116_f_at	16605_s_at	18888_at
13219_s_at	15122_s_at	16610_s_at	18907_s_at
13260_s_at	15126_s_at	16620_s_at	18917_i_at
13278_f_at	15131_s_at	16636_s_at	18939_at
13279_s_at	15132_s_at	16650_s_at	18974_at
13285_s_at	15137_s_at	16805_s_at	19190_g_at
13288_s_at	15153_s_at	16845_at	19199_at
13292_s_at	15159_s_at	16899_at	19202_at
13297_s_at	15160_s_at	16914_s_at	19211_at
13351_at	15197_s_at	16943_s_at	19384_at
13352_at	15355_s_at	16996_s_at	19406_at
13435_at	15379_at	17010_s_at	19426_s_at
13467_at	15417_s_at	17043_s_at	19442_at
13488_at	15422_at	17068_s_at	19470_at
13495_s_at	15451_at	17109_s_at	19577_at
13656_at	15452_at	17128_s_at	19597_s_at

TABLE 6: 2X DOWN COLD, ONLY

11991_g_at	12450_s_at	12881_s_at	13151_g_at	13621_g_at	14056_at
11992_at	12474_at	12889_s_at	13160_at	13623_r_at	14057_at
12001_at	12491_at	12901_s_at	13161_at	13629_s_at	14061_at
12006_s_at	12497_at	12902_at	13162_at	13631_at	14067_at
12007_at	12500_s_at	12904_s_at	13165_at	13635_at	14068_s_at
12009_at	12515_at	12905_s_at	13166_at	13646_at	14072_at
12022_at	12521_at	12908_s_at	13185_at	13650_at	14074_at
12023_s_at	12523_at	12910_s_at	13193_s_at	13652_at	14075_at
12026_at	12526_at	12916_s_at	13211_s_at	13653_at	14083_at
12037_at	12527_at	12923_s_at	13213_s_at	13655_at	14084_at
12052_at	12534_g_at	12926_s_at	13219_s_at	13657_at	14089_at
12125_at	12549_s_at	12931_s_at	13233_at	13666_s_at	14095_s_at
12143_at	12550_s_at	12937_r_at	13236_s_at	13667_s_at	14096_at
12149_at	12552_at	12941_g_at	13239_s_at	13669_s_at	14100_at
12156_at	12555_s_at	12942_at	13241_s_at	13670_s_at	14101_at
12166_i_at	12556_at	12949_at	13254_s_at	13672_s_at	14103_at
12167_at	12575_s_at	12953_at	13266_s_at	13678_s_at	14121_at
12169_i_at	12576_s_at	12958_at	13273_s_at	13679_s_at	14129_s_at
12176_at	12581_s_at	12959_at	13275_f_at	13688_s_at	14133_s_at
12179_at	12587_at	12966_s_at	13276_s_at	13690_s_at	14143_at
12196_at	12597_at	12975_at	13278_f_at	13691_s_at	14148_at
12198_at	12606_at	12983_at	13280_s_at	13692_s_at	14162_at
12200_at	12609_at	12984_at	13285_s_at	13714_at	14194_at
12202_at	12646_at	13002_at	13296_s_at	13724_at	14208_at
12212_at	12649_at	13009_i_at	13347_at	13748_at	14217_at
12214_g_at	12653_at	13011_at	13355_at	13751_at	14223_at
12224_at	12661_at	13014_at	13361_at	13759_at	14235_at
12226_at	12666_at	13024_at	13404_at	13767_at	14236_at
12233_at	12678_i_at	13034_s_at	13406_at	13789_at	14251_f_at
12240_at	12705_f_at	13041_s_at	13459_at	13876_at	14252_f_at
12253_g_at	12736_f_at	13048_s_at	13460_at	13880_s_at	14285_at
12270_at	12737_f_at	13067_s_at	13464_at	13883_at	14301_s_at
12278_at	12758_at	13068_at	13523_s_at	13887_s_at	14316_at
12284_at	12760_g_at	13073_s_at	13529_at	13895_at	14366_at
12287_s_at	12764_f_at	13078_s_at	13541_at	13906_s_at	14369_at
12293_at	12765_at	13079_at	13545_s_at	13919_at	14392_g_at
12294_s_at	12772_at	13081_s_at	13550_at	13923_at	14421_at
12300_at	12776_at	13083_at	13552_at	13932_at	14431_at
12312_at	12784_at	13090_at	13556_i_at	13935_at	14436_at
12315_at	12793_at	13092_s_at	13561_at	13940_at	14448_at
12324_i_at	12794_at	13098_at	13563_s_at	13949_s_at	14450_at
12331_s_at	12795_at	13103_at	13567_at	13954_g_at	14454_at
12344_at	12809_g_at	13105_at	13568_at	13973_at	14459_at
12348_at	12812_at	13107_s_at	13571_at	13983_at	14478_at
12353_at	12815_at	13108_at	13576_at	13989_at	14482_at
12372_at	12816_at	13114_at	13583_at	14010_at	14485_at
12374_i_at	12818_at	13118_f_at	13598_at	14014_at	14492_s_at
12405_at	12824_s_at	13123_at	13601_at	14015_s_at	14505_at
12408_at	12828_s_at	13124_at	13604_at	14016_s_at	14510_at
12410_g_at	12842_s_at	13133_s_at	13613_at	14025_s_at	14517_at
12419_at	12846_s_at	13135_s_at	13616_s_at	14027_at	14519_at
12427_at	12858_at	13139_at	13618_s_at	14030_at	14534_s_at
12438_at	12869_s_at	13146_s_at	13619_at	14044_at	14538_r_at

TABLE 6 (cont): 2X DOWN COLD, ONLY

14558_at	15047_at	15512_at	15940_at	16357_at	16894_at
14559_s_at	15054_at	15514_at	15948_s_at	16380_at	16899_at
14572_at	15056_at	15515_r_at	15956_at	16382_at	16920_at
14584_at	15058_s_at	15529_at	15976_at	16385_s_at	16921_at
14587_at	15063_at	15534_f_at	15978_at	16393_s_at	16924_s_at
14595_at	15066_at	15538_at	15986_s_at	16402_s_at	16926_s_at
14602_at	15081_at	15541_at	16004_s_at	16417_s_at	16931_s_at
14603_at	15091_at	15543_at	16015_at	16442_s_at	16934_s_at
14605_at	15097_s_at	15551_at	16017_at	16446_at	16937_at
14620_s_at	15102_s_at	15574_s_at	16019_at	16448_g_at	16938_at
14626_s_at	15107_s_at	15576_s_at	16024_at	16453_s_at	16942_at
14630_s_at	15118_s_at	15577_s_at	16031_at	16457_s_at	16949_s_at
14637_s_at	15127_s_at	15578_s_at	16055_s_at	16470_s_at	16950_s_at
14640_s_at	15130_s_at	15581_s_at	16059_s_at	16481_s_at	16952_s_at
14642_f_at	15132_s_at	15583_s_at	16065_s_at	16510_at	16962_s_at
14650_s_at	15133_s_at	15591_s_at	16066_s_at	16512_s_at	16965_s_at
14654_s_at	15139_s_at	15595_s_at	16069_s_at	16514_at	16970_s_at
14667_s_at	15143_s_at	15602_f_at	16074_s_at	16516_at	16977_at
14668_s_at	15146_s_at	15606_s_at	16076_s_at	16523_s_at	16984_at
14669_s_at	15150_s_at	15608_s_at	16077_s_at	16526_at	16989_at
14672_s_at	15161_s_at	15616_s_at	16084_s_at	16528_at	16993_at
14673_s_at	15162_s_at	15618_s_at	16089_s_at	16531_s_at	16997_at
14675_s_at	15167_s_at	15620_s_at	16102_s_at	16535_s_at	17000_at
14679_s_at	15170_s_at	15627_s_at	16103_s_at	16537_s_at	17005_at
14681_g_at	15171_s_at	15634_s_at	16105_s_at	16543_s_at	17010_s_at
14682_i_at	15178_s_at	15637_s_at	16108_s_at	16544_s_at	17017_s_at
14689_at	15182_s_at	15642_s_at	16112_s_at	16550_s_at	17031_s_at
14701_s_at	15185_s_at	15643_s_at	16117_s_at	16559_s_at	17040_s_at
14703_at	15188_s_at	15646_s_at	16118_s_at	16567_s_at	17053_s_at
14712_s_at	15193_s_at	15651_f_at	16125_s_at	16577_s_at	17056_s_at
14713_s_at	15196_s_at	15652_s_at	16127_s_at	16579_s_at	17063_s_at
14715_s_at	15201_f_at	15667_s_at	16134_s_at	16580_s_at	17070_s_at
14734_s_at	15206_s_at	15668_s_at	16136_s_at	16583_s_at	17074_s_at
14781_at	15207_s_at	15670_s_at	16138_s_at	16584_s_at	17084_s_at
14800_at	15213_s_at	15671_s_at	16140_s_at	16593_s_at	17085_s_at
14856_s_at	15243_at	15675_s_at	16143_s_at	16598_s_at	17087_s_at
14882_at	15256_at	15679_s_at	16144_s_at	16603_s_at	17092_s_at
14908_at	15348_at	15685_s_at	16145_s_at	16604_s_at	17095_s_at
14912_at	15350_at	15688_s_at	16148_s_at	16611_s_at	17096_s_at
14914_at	15372_at	15689_s_at	16151_s_at	16614_s_at	17097_s_at
14924_at	15383_at	15692_s_at	16158_f_at	16617_s_at	17103_s_at
14942_at	15384_at	15775_at	16160_f_at	16618_s_at	17105_s_at
14945_at	15385_at	15776_at	16168_s_at	16620_s_at	17110_s_at
14955_at	15387_at	15845_at	16169_s_at	16631_s_at	17115_s_at
14957_s_at	15406_at	15848_at	16171_s_at	16634_s_at	17116_s_at
14974_at	15423_at	15858_at	16172_s_at	16639_s_at	17119_s_at
14980_at	15431_at	15866_s_at	16222_at	16640_s_at	17122_s_at
14981_at	15464_at	15894_at	16232_s_at	16652_s_at	17207_at
14995_at	15468_at	15900_at	16242_at	16654_at	17215_at
15009_at	15471_at	15901_at	16288_at	16777_at	17247_at
15018_at	15475_s_at	15902_at	16294_s_at	16784_at	17254_at
15024_at	15485_at	15913_at	16325_at	16811_at	17286_at
15026_at	15505_at	15928_at	16346_s_at	16893_at	17288_s_at

TABLE 6 (cont): 2X DOWN COLD, ONLY

17292_at	17910_at	18337_s_at	18823_s_at	19382_at	19897_s_at
17303_s_at	17916_at	18339_at	18844_at	19401_at	19903_at
17305_at	17917_s_at	18365_s_at	18859_at	19402_at	19905_at
17318_at	17918_at	18402_at	18864_at	19406_at	19906_at
17323_at	17926_s_at	18439_s_at	18880_at	19413_at	19907_at
17374_at	17935_at	18487_at	18883_g_at	19416_at	19910_at
17405_at	17956_i_at	18508_s_at	18886_at	19429_at	19920_s_at
17415_at	17961_at	18512_at	18892_s_at	19432_s_at	19932_at
17418_s_at	17966_at	18543_at	18909_s_at	19439_at	19951_at
17420_at	17978_s_at	18552_at	18911_at	19448_s_at	19962_at
17423_s_at	17986_s_at	18567_at	18913_s_at	19454_at	19963_at
17426_at	17993_at	18573_at	18916_s_at	19462_s_at	19969_at
17427_at	17998_s_at	18580_at	18921_g_at	19464_at	19970_s_at
17430_s_at	18003_at	18581_at	18950_at	19469_at	19972_at
17431_at	18005_at	18584_at	18951_s_at	19483_at	19981_at
17439_g_at	18010_s_at	18587_s_at	18956_at	19484_s_at	19990_at
17442_i_at	18013_r_at	18590_at	18966_at	19513_at	19996_at
17449_s_at	18023_s_at	18591_at	18972_at	19548_at	19999_s_at
17462_s_at	18029_g_at	18592_s_at	18994_at	19563_s_at	20009_s_at
17463_at	18030_i_at	18600_at	19030_at	19567_at	20013_at
17465_at	18045_at	18601_s_at	19039_at	19581_at	20017_at
17475_at	18046_s_at	18607_s_at	19068_i_at	19595_s_at	20018_at
17479_at	18059_i_at	18610_s_at	19108_at	19606_at	20024_s_at
17495_s_at	18064_r_at	18611_at	19115_at	19623_at	20045_at
17508_s_at	18065_r_at	18616_at	19117_s_at	19627_s_at	20047_at
17522_s_at	18074_at	18622_g_at	19122_at	19636_at	20048_at
17523_s_at	18076_s_at	18628_at	19125_s_at	19641_at	20050_at
17529_s_at	18077_at	18631_at	19127_at	19652_at	20051_at
17537_s_at	18078_at	18636_at	19135_at	19655_at	20058_at
17539_s_at	18081_at	18638_at	19144_at	19658_at	20067_at
17543_s_at	18083_r_at	18652_at	19157_s_at	19660_at	20069_at
17555_s_at	18085_r_at	18657_at	19158_at	19665_s_at	20099_at
17557_s_at	18091_at	18667_at	19177_at	19667_at	20100_at
17560_s_at	18154_s_at	18675_at	19192_at	19690_s_at	20113_s_at
17564_s_at	18165_at	18684_at	19198_at	19695_at	20123_at
17565_s_at	18174_at	18686_s_at	19222_at	19717_at	20127_s_at
17568_at	18221_at	18688_s_at	19226_g_at	19726_s_at	20129_at
17570_g_at	18226_s_at	18693_s_at	19227_at	19752_s_at	20133_i_at
17573_at	18230_at	18698_s_at	19230_at	19759_at	20152_at
17577_g_at	18237_at	18706_s_at	19232_s_at	19782_at	20154_at
17578_at	18255_at	18707_at	19263_at	19789_s_at	20173_at
17579_s_at	18257_at	18726_s_at	19285_at	19803_s_at	20178_s_at
17585_s_at	18258_s_at	18727_at	19332_at	19828_at	20183_at
17596_at	18274_s_at	18732_i_at	19346_at	19831_i_at	20188_at
17600_s_at	18275_at	18735_s_at	19347_at	19833_s_at	20189_at
17823_s_at	18278_at	18736_at	19361_s_at	19834_at	20197_at
17840_s_at	18283_at	18738_f_at	19362_at	19835_at	20200_at
17849_s_at	18290_at	18747_f_at	19363_at	19841_at	20210_g_at
17857_at	18291_at	18754_at	19364_at	19867_at	20213_at
17865_at	18299_s_at	18782_at	19365_s_at	19870_s_at	20229_at
17882_at	18300_at	18789_at	19373_at	19871_at	20232_s_at
17885_at	18306_at	18806_s_at	19379_at	19872_at	20255_at
17902_s_at	18327_s_at	18814_at	19381_at	19876_at	20278_s_at

TABLE 6 (cont): 2X DOWN COLD, ONLY

20284_at	20693_at
20288_g_at	20701_s_at
20294_at	20704_at
20312_s_at	20707_s_at
20331_at	20719_at
20335_s_at	
20350_s_at	
20354_s_at	
20355_at	
20369_s_at	
20378_g_at	
20383_at	
20385_s_at	
20387_at	
20399_at	
20409_g_at	
20420_at	
20429_s_at	
20439_at	
20440_at	
20444_at	
20445_at	
20449_at	
20474_at	
20480_s_at	
20495_s_at	
20499_at	
20501_at	
20516_at	
20520_s_at	
20530_s_at	
20538_s_at	
20547_at	
20558_at	
20561_at	
20567_at	
20571_at	
20590_at	
20592_at	
20594_at	
20608_s_at	
20612_s_at	
20616_at	
20620_g_at	
20635_s_at	
20637_at	
20643_at	
20654_s_at	
20670_at	
20674_s_at	
20684_at	
20685_at	
20689_s_at	

TABLE 7

SALINE STRESS RESPONSIVE SEQUENCES

SEQ AFFYMETRIX ID NO:	ID NO:	SEQ AFFYMETRIX ID NO:	ID NO:	SEQ AFFYMETRIX ID NO:	ID NO:
2227	12011_S_AT	2275	13993_S_AT	2324	15965_AT
2228	12153_AT	2276	14000_AT	2325	15969_S_AT
2229	12180_AT	2277	14003_AT	2326	15975_S_AT
2230	12186_AT	2278	14032_AT	2327	15995_S_AT
2231	12216_AT	2279	14043_AT	2328	15998_S_AT
2232	12265_AT	2280	14070_AT		18090_S_AT
2233	12335_AT	2281	14267_AT	2329	16028_AT
2234	12449_S_AT	2282	14269_AT	2330	16050_AT
2235	12470_AT	2283	14418_AT	2331	16060_S_AT
2236	12479_AT	2284	14427_AT	2332	16067_S_AT
2237	12487_AT	2285	14501_AT	2333	16072_S_AT
2238	12493_G_AT	2286	14544_AT	2334	16088_F_AT
2239	12562_AT	2287	14546_S_AT	2335	16273_AT
2240	12685_AT	2288	14570_AT	2336	16314_AT
2241	12704_F_AT	2289	14596_AT	2337	16413_S_AT
2242	12709_F_AT	2290	14729_S_AT	2338	16414_AT
2243	12734_F_AT	2291	14874_AT	2339	16426_AT
2244	12739_S_AT	2292	14888_AT	2340	16436_AT
2245	12750_S_AT	2293	14951_AT	2341	16455_AT
2246	12761_S_AT	2294	14952_AT	2342	16502_AT
2247	12813_AT	2295	14959_AT	2343	16548_S_AT
2248	12845_S_AT	2296	14979_AT	2344	16568_S_AT
2249	12946_AT	2297	15006_AT	2345	16582_S_AT
2250	13003_S_AT	2298	15042_AT	2346	16589_S_AT
2251	13052_S_AT	2299	15049_AT	2347	16594_S_AT
2252	13094_AT	2300	15062_AT	2348	16613_S_AT
2253	13142_AT	2301	15108_S_AT	2349	16651_S_AT
2254	13172_S_AT	2302	15147_S_AT	2350	16668_AT
	17880_S_AT	2303	15175_S_AT	2351	16820_AT
2255	13198_1_AT	2304	15176_S_AT	2352	16987_S_AT
2256	13209_S_AT	2305	15186_S_AT	2353	16995_AT
	16165_S_AT		18696_S_AT	2354	17039_S_AT
2257	13229_S_AT	2306	15192_S_AT	2355	17273_AT
2258	13253_F_AT	2307	15208_S_AT	2356	17278_AT
2259	13344_S_AT	2308	15324_AT	2357	17433_AT
2260	13370_AT	2309	15371_AT	2358	17467_AT
2261	13387_AT	2310	15424_AT	2359	17566_AT
2262	13408_S_AT	2311	15463_AT	2360	17595_S_AT
2263	13429_AT	2312	15465_AT	2361	17744_S_AT
2264	13472_AT	2313	15497_S_AT	2362	17758_AT
2265	13526_AT	2314	15589_S_AT	2363	17864_AT
2266	13569_AT	2315	15636_S_AT	2364	17868_AT
2267	13614_AT	2316	15663_S_AT	2365	17876_AT
2268	13686_S_AT	2317	15770_AT	2366	17894_AT
2269	13718_AT	2318	15792_AT	2367	17942_S_AT
2270	13719_AT	2319	15855_AT	2368	18008_R_AT
2271	13902_AT	2320	15860_AT	2369	18027_AT
2272	13918_AT	2321	15891_AT	2370	18053_S_AT
2273	13944_AT	2322	15898_AT	2371	18062_AT
2274	13964_AT	2323	15909_AT	2372	18082_AT

TABLE 7 (cont)

2373	18121_S_AT	2426	20648_S_AT
2374	18240_S_AT	2427	20668_AT
2375	18248_S_AT		
2376	18264_AT		
2377	18276_AT		
2378	18287_AT		
2379	18310_AT		
2380	18367_S_AT		
2381	18506_AT		
2382	18605_S_AT		
2383	18618_S_AT		
2384	18626_AT		
2385	18666_S_AT		
2386	18834_AT		
2387	18847_AT		
2388	18896_AT		
2389	18899_S_AT		
2390	18973_AT		
2391	18983_S_AT		
2392	18988_AT		
2393	18998_S_AT		
2394	19065_AT		
2395	19119_I_AT		
	19121_AT		
2396	19207_AT		
2397	19220_AT		
2398	19284_AT		
2399	19315_AT		
2400	19348_AT		
2401	19403_S_AT		
2402	19437_S_AT		
2403	19502_AT		
2404	19609_AT		
2405	19645_AT		
2406	19742_AT		
2407	19863_AT		
2408	19873_AT		
2409	19891_AT		
2410	20004_S_AT		
2411	20053_AT		
2412	20138_AT		
2413	20193_AT		
2414	20199_AT		
2415	20220_AT		
2416	20239_G_AT		
2417	20297_AT		
2418	20324_S_AT		
2419	20353_AT		
2420	20362_AT		
2421	20389_AT		
2422	20546_AT		
2423	20600_AT		
2424	20623_AT		
2425	20629_AT		

TABLE 8: 2X UP IN SALT, ONLY

12037_at	14570_at	16190_at	18506_at	20648_s_at
12137_at	14578_s_at	16196_at	18605_s_at	20678_at
12153_at	14596_at	16273_at	18626_at	20686_at
12186_at	14646_s_at	16314_at	18666_s_at	20707_s_at
12216_at	14662_f_at	16413_s_at	18747_f_at	
12268_at	14668_s_at	16414_at	18782_at	
12449_s_at	14729_s_at	16417_s_at	18834_at	
12470_at	14874_at	16455_at	18847_at	
12476_at	14888_at	16548_s_at	18913_s_at	
12487_at	14918_at	16582_s_at	18973_at	
12493_g_at	14952_at	16589_s_at	18988_at	
12609_at	14959_at	16594_s_at	18998_s_at	
12685_at	14986_at	16613_s_at	19065_at	
12704_f_at	15006_at	16651_s_at	19068_i_at	
12709_f_at	15042_at	16668_at	19123_at	
12734_f_at	15047_at	16690_g_at	19177_at	
12739_s_at	15062_at	16762_at	19220_at	
12750_s_at	15063_at	16820_at	19284_at	
12761_s_at	15108_s_at	16873_i_at	19288_at	
12819_at	15133_s_at	16987_s_at	19315_at	
12845_s_at	15147_s_at	16989_at	19437_s_at	
12946_at	15170_s_at	16995_at	19484_s_at	
13142_at	15175_s_at	17039_s_at	19502_at	
13198_i_at	15182_s_at	17040_s_at	19503_at	
13229_s_at	15190_s_at	17400_s_at	19592_at	
13275_f_at	15192_s_at	17425_s_at	19645_at	
13344_s_at	15324_at	17433_at	19742_at	
13370_at	15392_at	17467_at	19835_at	
13408_s_at	15424_at	17490_s_at	19873_at	
13464_at	15467_at	17529_s_at	19891_at	
13472_at	15497_s_at	17543_s_at	19992_at	
13526_at	15581_s_at	17566_at	20004_s_at	
13614_at	15623_f_at	17595_s_at	20053_at	
13652_at	15636_s_at	17744_s_at	20133_i_at	
13679_s_at	15646_s_at	17758_at	20138_at	
13751_at	15670_s_at	17855_at	20190_at	
13918_at	15770_at	17864_at	20199_at	
13919_at	15775_at	17876_at	20200_at	
13944_at	15778_at	18008_r_at	20297_at	
13964_at	15792_at	18013_r_at	20324_s_at	
13967_s_at	15855_at	18024_s_at	20335_s_at	
13993_s_at	15891_at	18027_at	20353_at	
14000_at	15909_at	18053_s_at	20362_at	
14032_at	15923_at	18078_at	20385_s_at	
14043_at	15969_s_at	18082_at	20389_at	
14052_at	15975_s_at	18090_s_at	20402_s_at	
14067_at	15995_s_at	18091_at	20450_at	
14070_at	15998_s_at	18121_s_at	20468_at	
14269_at	16017_at	18264_at	20489_at	
14285_at	16050_at	18276_at	20546_at	
14427_at	16067_s_at	18300_at	20569_s_at	
14501_at	16072_s_at	18367_s_at	20600_at	
14540_at	16165_s_at	18471_at	20623_at	

TABLE 9: 2X UP SALT, 3 HR ONLY

12037_at	15042_at	16987_s_at	20004_s_at
12137_at	15047_at	16989_at	20053_at
12153_at	15062_at	17039_s_at	20133_i_at
12186_at	15063_at	17040_s_at	20138_at
12216_at	15108_s_at	17425_s_at	20190_at
12268_at	15133_s_at	17433_at	20199_at
12470_at	15147_s_at	17490_s_at	20200_at
12476_at	15170_s_at	17543_s_at	20220_at
12487_at	15175_s_at	17744_s_at	20362_at
12493_g_at	15182_s_at	17864_at	20385_s_at
12609_at	15190_s_at	17876_at	20389_at
12685_at	15192_s_at	18008_r_at	20489_at
12704_f_at	15324_at	18013_r_at	20546_at
12709_f_at	15424_at	18024_s_at	20623_at
12734_f_at	15467_at	18027_at	20648_s_at
12739_s_at	15497_s_at	18053_s_at	20678_at
12750_s_at	15623_f_at	18078_at	20707_s_at
12819_at	15636_s_at	18082_at	
12946_at	15646_s_at	18090_s_at	
13142_at	15670_s_at	18091_at	
13229_s_at	15770_at	18121_s_at	
13275_f_at	15775_at	18264_at	
13370_at	15778_at	18276_at	
13408_s_at	15792_at	18367_s_at	
13464_at	15855_at	18471_at	
13472_at	15891_at	18506_at	
13614_at	15909_at	18605_s_at	
13652_at	15923_at	18626_at	
13679_s_at	15969_s_at	18666_s_at	
13918_at	15975_s_at	18747_f_at	
13919_at	15995_s_at	18782_at	
13944_at	15998_s_at	18834_at	
13987_s_at	16017_at	18847_at	
13993_s_at	16050_at	18913_s_at	
14000_at	16067_s_at	18973_at	
14032_at	16072_s_at	18988_at	
14043_at	16165_s_at	19065_at	
14052_at	16196_at	19068_i_at	
14067_at	16273_at	19123_at	
14269_at	16314_at	19177_at	
14285_at	16414_at	19220_at	
14501_at	16417_s_at	19288_at	
14540_at	16455_at	19315_at	
14570_at	16548_s_at	19437_s_at	
14596_at	16582_s_at	19484_s_at	
14668_s_at	16589_s_at	19502_at	
14729_s_at	16594_s_at	19503_at	
14888_at	16613_s_at	19592_at	
14918_at	16651_s_at	19645_at	
14952_at	16668_at	19742_at	
14959_at	16762_at	19835_at	
14986_at	16820_at	19873_at	
15006_at	16873_i_at	19891_at	

TABLE 10: 2X DOWN SALT, ONLY

12011_s_at	16046_s_at	20239_g_at
12180_at	16060_s_at	20433_at
12265_at	16088_f_at	20629_at
12335_at	16150_s_at	20668_at
12479_at	16166_s_at	
12562_at	16316_at	
12656_at	16340_at	
12813_at	16367_i_at	
13003_s_at	16426_at	
13052_s_at	16427_at	
13094_at	16436_at	
13178_at	16489_at	
13253_f_at	16502_at	
13387_at	16568_s_at	
13429_at	16638_s_at	
13472_at	16646_s_at	
13569_at	17273_at	
13686_s_at	17278_at	
13718_at	17567_at	
13719_at	17868_at	
13902_at	17880_s_at	
14003_at	17894_at	
14144_at	17901_at	
14267_at	17942_s_at	
14418_at	17960_at	
14544_at	17999_at	
14546_s_at	18062_at	
14636_s_at	18240_s_at	
14951_at	18248_s_at	
14956_s_at	18267_at	
14979_at	18279_s_at	
14990_at	18287_at	
15040_g_at	18310_at	
15049_at	18351_s_at	
15115_f_at	18455_at	
15137_s_at	18560_at	
15148_s_at	18571_at	
15176_s_at	18618_s_at	
15208_s_at	18896_at	
15371_at	18899_s_at	
15453_s_at	18967_s_at	
15463_at	18983_s_at	
15465_at	19119_i_at	
15589_s_at	19121_at	
15663_s_at	19207_at	
15860_at	19348_at	
15898_at	19403_s_at	
15931_at	19609_at	
15965_at	19742_at	
15970_s_at	19826_at	
15972_s_at	19863_at	
16005_s_at	19883_at	
16028_at	20193_at	

TABLE 11

OSMOTIC STRESS RESPONSIVE SEQUENCES

SEQ AFFYMETRIX ID NO:	ID NO:	SEQ AFFYMETRIX ID NO:	ID NO:	SEQ AFFYMETRIX ID NO:	ID NO:
2428	11994_AT	2475	13995_AT	2523	17037_S_AT
2429	12028_AT	2476	14062_AT	2524	17054_S_AT
2430	12033_AT	2477	14118_I_AT	2525	17257_S_AT
2431	12039_AT	2478	14141_AT		18725_S_AT
2432	12068_AT	2479	14310_AT	2526	17270_AT
2433	12096_AT	2480	14354_AT	2527	17275_I_AT
2434	12110_AT	2481	14476_AT	2528	17376_AT
2435	12114_AT	2482	14513_S_AT	2529	17378_AT
2436	12135_AT	2483	14568_S_AT	2530	17468_AT
2437	12139_AT	2484	14604_AT	2531	17481_AT
2438	12189_AT	2485	14634_S_AT	2532	17511_S_AT
2439	12191_AT	2486	14660_S_AT	2533	17519_S_AT
2440	12211_AT	2487	14666_S_AT	2534	17815_S_AT
2441	12223_S_AT	2488	14686_S_AT	2535	17897_AT
2442	12366_S_AT		17464_AT	2536	17923_S_AT
	12869_S_AT	2489	14726_S_AT	2537	17934_AT
2443	12381_AT	2490	14848_S_AT	2538	17937_S_AT
2444	12406_S_AT	2491	14873_AT	2539	17944_AT
2445	12412_AT	2492	14883_AT	2540	17958_AT
2446	12453_AT	2493	15082_AT	2541	18216_AT
2447	12571_S_AT	2494	15121_S_AT	2542	18227_AT
2448	12662_AT		16014_S_AT	2543	18284_AT
2449	12746_I_AT	2495	15168_S_AT	2544	18301_S_AT
2450	12774_AT	2496	15271_AT	2545	18312_S_AT
2451	12787_AT	2497	15338_AT	2546	18326_S_AT
2452	12847_AT	2498	15418_AT	2547	18369_AT
2453	12848_AT	2499	15429_AT	2548	18411_AT
2454	12895_AT	2500	15548_AT	2549	18533_AT
2455	12911_S_AT	2501	15666_S_AT	2550	18576_S_AT
2456	12920_AT	2502	15672_S_AT	2551	18599_AT
	12921_S_AT	2503	15680_S_AT	2552	18640_AT
2457	13027_AT	2504	15867_AT	2553	18672_S_AT
2458	13059_AT	2505	15918_AT	2554	18720_S_AT
2459	13075_I_AT	2506	15999_S_AT	2555	18768_AT
2460	13180_S_AT	2507	16303_AT	2556	18877_AT
2461	13255_I_AT	2508	16363_AT	2557	18942_AT
2462	13270_AT	2509	16440_S_AT	2558	18945_AT
	18167_S_AT	2510	16458_S_AT	2559	18960_AT
2463	13283_S_AT	2511	16475_AT	2560	18965_AT
2464	13382_AT	2512	16513_S_AT	2561	19060_AT
2465	13386_S_AT	2513	16529_AT	2562	19164_G_AT
2466	13433_AT	2514	16547_S_AT	2563	19266_AT
2467	13482_AT	2515	16553_F_AT	2564	19366_S_AT
2468	13732_AT	2516	16563_S_AT	2565	19369_AT
2469	13733_I_AT	2517	16629_S_AT	2566	19371_AT
2470	13842_AT	2518	16797_AT	2567	19386_AT
2471	13860_S_AT	2519	16814_AT	2568	19412_AT
2472	13868_AT	2520	16832_AT	2569	19427_S_AT
2473	13901_AT	2521	16976_S_AT	2570	19622_G_AT
2474	13933_AT	2522	17007_AT	2571	19681_AT

TABLE 11 (cont)

2572	19819_S_AT
2573	19961_S_AT
2574	20002_AT
2575	20034_I_AT
2576	20062_AT
2577	20136_AT
2578	20223_AT
2579	20235_I_AT
2580	20401_AT
2581	20407_AT
2582	20470_AT
2583	20626_AT
2584	20631_S_AT
2585	20647_AT

TABLE 12: 2X UP IN MANNITOL, ONLY

12039_at	16832_at
12068_at	16993_at
12139_at	17037_s_at
12212_at	17054_s_at
12278_at	17083_s_at
12366_s_at	17097_s_at
12453_at	17119_s_at
12556_at	17270_at
12575_s_at	17305_at
12746_i_at	17376_at
12848_at	17378_at
12869_s_at	17449_s_at
12920_at	17481_at
12921_s_at	17533_s_at
13041_s_at	17832_s_at
13059_at	17923_s_at
13241_s_at	17944_at
13255_i_at	18059_i_at
13270_at	18216_at
13382_at	18230_at
13406_at	18255_at
13433_at	18284_at
13550_at	18301_s_at
13672_s_at	18312_s_at
13716_at	18326_s_at
13842_at	18599_at
13933_at	18672_s_at
13995_at	18720_s_at
14062_at	18768_at
14075_at	18814_at
14162_at	18877_at
14208_at	18921_g_at
14217_at	18960_at
14235_at	19060_at
14310_at	19182_at
14431_at	19192_at
14513_s_at	19266_at
14584_at	19369_at
14604_at	19386_at
14673_s_at	19402_at
14856_s_at	19412_at
15207_s_at	19432_s_at
15338_at	19469_at
15406_at	19622_g_at
15418_at	19819_s_at
15591_s_at	19826_at
15666_s_at	20152_at
15680_s_at	20223_at
15866_s_at	20235_i_at
15918_at	20365_s_at
16340_at	20470_at
16553_f_at	20537_at
16797_at	20547_at

TABLE 13: 2X UP IN MANNITOL, 3 HR ONLY

12039_at	17449_s_at
12068_at	17481_at
12139_at	17533_s_at
12212_at	17923_s_at
12278_at	17944_at
12366_s_at	18059_i_at
12453_at	18216_at
12556_at	18230_at
12575_s_at	18255_at
12746_i_at	18301_s_at
12848_at	18312_s_at
12869_s_at	18326_s_at
12920_at	18599_at
12921_s_at	18720_s_at
13041_s_at	18768_at
13059_at	18814_at
13241_s_at	18877_at
13382_at	18921_g_at
13406_at	18960_at
13433_at	19060_at
13550_at	19192_at
13672_s_at	19266_at
13933_at	19369_at
13995_at	19386_at
14062_at	19402_at
14075_at	19412_at
14162_at	19432_s_at
14217_at	19469_at
14310_at	19622_g_at
14431_at	19819_s_at
14513_s_at	20152_at
14584_at	20223_at
14604_at	20235_i_at
14673_s_at	20365_s_at
14856_s_at	20470_at
15207_s_at	20537_at
15338_at	
15418_at	
15591_s_at	
15866_s_at	
15918_at	
16340_at	
16553_f_at	
16797_at	
16832_at	
17037_s_at	
17054_s_at	
17083_s_at	
17097_s_at	
17270_at	
17305_at	
17376_at	
17378_at	

TABLE 14: 2X DOWN IN MANNITOL, ONLY

12028_at	14897_at	17958_at
12033_at	14918_at	18012_s_at
12110_at	15082_at	18227_at
12114_at	15084_at	18272_at
12189_at	15098_s_at	18331_s_at
12191_at	15105_s_at	18369_at
12211_at	15121_s_at	18411_at
12223_s_at	15126_s_at	18533_at
12268_at	15168_s_at	18576_s_at
12345_at	15271_at	18640_at
12381_at	15429_at	18696_s_at
12406_s_at	15548_at	18945_at
12412_at	15672_s_at	18949_at
12522_at	15753_at	18953_at
12571_s_at	15867_at	18965_at
12662_at	15999_s_at	19164_g_at
12787_at	16001_at	19322_at
12847_at	16021_s_at	19366_s_at
12895_at	16190_at	19371_at
12911_s_at	16260_at	19397_at
13027_at	16303_at	19427_s_at
13075_i_at	16363_at	19681_at
13221_at	16458_s_at	19707_s_at
13262_s_at	16468_at	19839_at
13283_s_at	16475_at	19961_s_at
13386_s_at	16513_s_at	19976_at
13447_s_at	16529_at	19998_at
13482_at	16563_s_at	20002_at
13634_s_at	16690_g_at	20034_i_at
13709_s_at	16814_at	20136_at
13732_at	16847_at	20382_s_at
13733_i_at	16927_s_at	20407_at
13812_s_at	16976_s_at	20529_at
13825_s_at	17007_at	20626_at
13860_s_at	17014_s_at	20631_s_at
13868_at	17016_s_at	20647_at
13901_at	17071_s_at	20699_at
14052_at	17090_s_at	
14224_at	17257_s_at	
14244_s_at	17275_i_at	
14254_s_at	17424_at	
14256_f_at	17464_at	
14354_at	17468_at	
14476_at	17511_s_at	
14568_s_at	17519_s_at	
14634_s_at	17525_s_at	
14646_s_at	17645_s_at	
14660_s_at	17741_at	
14686_s_at	17815_s_at	
14726_s_at	17897_at	
14848_s_at	17899_at	
14873_at	17934_at	
14883_at	17937_s_at	

TABLE 15

COLD & OSOMOTIC STRESS RESPONSIVE SEQUENCES

SEQ	AFFYMETRIX	SEQ	AFFYMETRIX	SEQ	AFFYMETRIX
ID NO:	ID NO:	ID NO:	ID NO:	ID NO:	ID NO:
1699	12040_AT	1742	13262_S_AT	1787	14431_AT
1700	12048_AT	1743	13286_S_AT	1788	14480_AT
1701	12054_S_AT	1744	13324_AT	1789	14497_AT
1702	12077_AT	1745	13340_S_AT	1790	14553_AT
1703	12107_I_AT	1746	13361_AT	1791	14584_AT
1704	12113_AT	1747	13406_AT	1792	14600_AT
1705	12154_AT	1748	13441_S_AT	1793	14673_S_AT
1706	12171_AT	1749	13513_AT		19432_S_AT
1707	12212_AT	1750	13550_AT	1794	14681_G_AT
1708	12278_AT	1751	13573_AT	1795	14699_AT
1709	12317_AT	1752	13577_S_AT	1796	14751_AT
1710	12325_AT	1753	13606_AT	1797	14762_AT
1711	12333_AT	1754	13609_AT	1798	14828_S_AT
1712	12345_AT	1755	13625_S_AT	1799	14856_S_AT
1713	12349_S_AT	1756	13626_AT	1800	14882_AT
	14254_S_AT	1757	13634_S_AT	1801	14897_AT
	14256_F_AT	1758	13672_S_AT	1802	14978_AT
1714	12356_AT		18916_S_AT	1803	14985_S_AT
1715	12380_AT	1759	13709_S_AT	1804	15031_AT
1716	12392_AT	1760	13736_AT	1805	15084_AT
1717	12460_S_AT	1761	13775_AT	1806	15096_AT
1718	12556_AT	1762	13810_AT	1807	15105_S_AT
1719	12575_S_AT	1763	13812_S_AT	1808	15110_S_AT
1720	12686_S_AT	1764	13825_S_AT	1809	15111_S_AT
1721	12701_I_AT	1765	14015_S_AT	1810	15120_S_AT
1722	12754_G_AT		14016_S_AT	1811	15126_S_AT
1723	12782_R_AT	1766	14029_AT	1812	15142_S_AT
1724	12784_AT	1767	14036_AT	1813	15144_S_AT
1725	12879_S_AT	1768	14051_AT	1814	15184_S_AT
1726	12891_AT	1769	14060_AT	1815	15198_S_AT
	16817_S_AT	1770	14064_AT	1816	15203_S_AT
1727	12898_G_AT	1771	14066_AT	1817	15207_S_AT
1728	12974_AT	1772	14075_AT	1818	15240_AT
1729	12998_AT	1773	14094_S_AT	1819	15366_AT
1730	13041_S_AT		19999_S_AT	1820	15398_AT
1731	13124_AT	1774	14096_AT	1821	15406_AT
1732	13134_S_AT	1775	14104_AT	1822	15448_AT
1733	13144_AT	1776	14123_S_AT	1823	15466_AT
1734	13147_AT	1777	14126_S_AT	1824	15481_AT
1735	13152_S_AT	1778	14131_AT	1825	15484_AT
1736	13187_I_AT	1779	14136_AT	1826	15549_AT
	16981_S_AT	1780	14139_AT	1827	15591_S_AT
1737	13192_S_AT		14140_AT	1828	15606_S_AT
	17525_S_AT	1781	14162_AT	1829	15614_S_AT
1738	13212_S_AT		14217_AT		16927_S_AT
		1782	14178_AT	1830	15629_S_AT
1739	13215_S_AT	1783	14201_AT	1831	15633_S_AT
	16649_S_AT	1784	14208_AT	1832	15641_S_AT
1740	13241_S_AT	1785	14235_AT		18012_S_AT
1741	13246_AT	1786	14242_S_AT	1833	15720_AT

TABLE 15 (cont)

1834	15815_S_AT	1884	17452_G_AT	1936	19469_AT
1835	15817_AT	1885	17540_S_AT	1937	19473_AT
1836	15837_AT	1886	17552_S_AT	1938	19597_S_AT
1837	15841_AT	1887	17571_AT	1939	19710_S_AT
1838	15866_S_AT	1888	17589_AT	1940	19830_AT
	18255_AT	1889	17641_G_AT	1941	19839_AT
1839	15872_AT	1890	17741_AT	1942	19840_S_AT
	18331_S_AT		18098_AT	1943	19853_AT
1840	15892_AT	1891	17766_AT	1944	19860_AT
1841	15933_AT	1892	17873_S_AT	1945	19880_AT
1842	15947_AT	1893	17904_AT	1946	19889_AT
1843	15959_S_AT	1894	17920_S_AT	1947	19898_AT
1844	16001_AT	1895	17925_AT	1948	19914_AT
1845	16052_AT	1896	17943_AT	1949	19924_AT
1846	16161_S_AT	1897	18059_I_AT	1950	19949_AT
1847	16204_AT	1898	18230_AT	1951	19976_AT
1848	16232_S_AT	1899	18263_AT	1952	19998_AT
1849	16252_AT	1900	18272_AT	1953	20030_AT
1850	16260_AT	1901	18540_AT	1954	20151_AT
1851	16266_AT	1902	18608_AT	1955	20152_AT
1852	16299_AT	1903	18647_AT	1956	20187_AT
1853	16365_AT	1904	18662_S_AT	1957	20214_I_AT
1854	16468_AT	1905	18664_AT	1958	20269_AT
1855	16477_AT	1906	18695_S_AT	1959	20271_AT
1856	16491_AT	1907	18704_AT	1960	20273_AT
1857	16523_S_AT	1908	18814_AT	1961	20299_AT
1858	16566_S_AT	1909	18907_S_AT	1962	20323_AT
1859	16570_S_AT	1910	18921_G_AT	1963	20429_S_AT
1860	16688_AT	1911	18924_AT	1964	20457_AT
1861	16840_AT	1912	18949_AT	1965	20480_S_AT
1862	16847_AT		19707_S_AT	1966	20529_AT
1863	16893_AT	1913	18995_AT	1967	20547_AT
1864	16896_S_AT	1914	19017_AT	1968	20555_S_AT
1865	16898_S_AT	1915	19034_AT	1969	20699_AT
1866	16912_S_AT	1916	19063_AT		
1867	16980_AT	1917	19142_AT		
1868	16993_AT	1918	19158_AT		
1869	17008_AT	1919	19180_AT		
1870	17012_S_AT	1920	19187_AT		
1871	17014_S_AT	1921	19192_AT		
1872	17016_S_AT	1922	19195_AT		
1873	17032_S_AT	1923	19199_AT		
1874	17050_S_AT	1924	19231_AT		
	17051_S_AT	1925	19263_AT		
1875	17071_S_AT	1926	19308_AT		
1876	17090_S_AT	1927	19322_AT		
	18690_S_AT	1928	19365_S_AT		
1877	17097_S_AT	1929	19372_AT		
1878	17104_S_AT	1930	19389_AT		
1879	17119_S_AT	1931	19392_AT		
1880	17160_AT	1932	19397_AT		
1881	17305_AT	1933	19400_AT		
1882	17424_AT	1934	19402_AT		
1883	17449_S_AT	1935	19458_AT		

TABLE 16: 2X UP IN MANNITOL & COLD, ONLY

12345_at	17066_s_at
12784_at	17540_s_at
13153_r_at	17567_at
13212_s_at	17766_at
13215_s_at	17904_at
13246_at	17920_s_at
13262_s_at	17943_at
13361_at	18263_at
13625_s_at	18351_s_at
13764_at	18662_s_at
13810_at	18670_g_at
14015_s_at	18695_s_at
14016_s_at	18704_at
14060_at	18729_at
14096_at	18995_at
14123_s_at	19158_at
14139_at	19473_at
14219_at	19710_s_at
14248_at	19883_at
14254_s_at	19889_at
14256_f_at	20030_at
14609_at	20269_at
14636_s_at	20271_at
14681_g_at	20299_at
14699_at	20429_s_at
14704_s_at	20438_at
14828_s_at	20480_s_at
14882_at	
15110_s_at	
15184_s_at	
15448_at	
15629_s_at	
15720_at	
15846_at	
15947_at	
16161_s_at	
16365_at	
16427_at	
16566_s_at	
16570_s_at	
16649_s_at	
16688_at	
16712_at	
16817_s_at	
16840_at	
16893_at	
16912_s_at	
16916_s_at	
16927_s_at	
16981_s_at	
17012_s_at	
17014_s_at	
17051_s_at	

TABLE 17: 2X DOWN COLD & MANNITOL, ONLY

12040_at	14553_at	17873_s_at
12048_at	14612_at	17925_at
12054_s_at	14751_at	18098_at
12077_at	14762_at	18540_at
12107_i_at	14978_at	18608_at
12113_at	14985_s_at	18647_at
12154_at	15031_at	18664_at
12171_at	15096_at	18690_s_at
12317_at	15111_s_at	18725_s_at
12325_at	15120_s_at	18924_at
12333_at	15142_s_at	19017_at
12356_at	15198_s_at	19034_at
12380_at	15203_s_at	19063_at
12392_at	15240_at	19141_at
12460_s_at	15366_at	19142_at
12686_s_at	15392_at	19180_at
12701_i_at	15398_at	19187_at
12782_r_at	15466_at	19195_at
12879_s_at	15481_at	19199_at
12898_g_at	15484_at	19231_at
12974_at	15549_at	19308_at
12998_at	15623_f_at	19372_at
13144_at	15815_s_at	19392_at
13147_at	15817_at	19400_at
13152_s_at	15841_at	19458_at
13192_s_at	15892_at	19597_s_at
13286_s_at	15933_at	19762_at
13324_at	15959_s_at	19830_at
13340_s_at	16052_at	19853_at
13441_s_at	16204_at	19869_at
13513_at	16252_at	19880_at
13573_at	16266_at	19898_at
13606_at	16299_at	19914_at
13609_at	16477_at	19924_at
13626_at	16491_at	19949_at
13736_at	16561_s_at	20151_at
13775_at	16645_s_at	20187_at
14029_at	16898_s_at	20214_i_at
14036_at	16980_at	20273_at
14051_at	17008_at	20323_at
14064_at	17104_s_at	20457_at
14066_at	17160_at	20555_s_at
14094_s_at	17317_at	
14104_at	17400_s_at	
14126_s_at	17452_g_at	
14131_at	17477_s_at	
14136_at	17500_s_at	
14178_at	17552_s_at	
14192_at	17571_at	
14201_at	17572_s_at	
14242_s_at	17589_at	
14480_at	17641_g_at	
14497_at	17855_at	

TABLE 18

COLD & SALINE STRESS RESPONSIVE SEQUENCES

SEQ AFFYMETRIX	2018	13544_AT	2062	15047_AT
ID NO: ID NO:	2019	13549_AT	2063	15063_AT
1970 12021_AT	2020	13565_AT	2064	15085_S_AT
1971 12037_AT	SEQ AFFYMETRIX		2065	15123_S_AT
1972 12094_AT	ID NO: ID NO:		2066	15133_S_AT
1973 12098_AT	2021	13580_AT	2067	15137_S_AT
1974 12128_AT	2022	13588_AT	SEQ AFFYMETRIX	
1975 12148_AT	2023	13649_AT	ID NO: ID NO:	
1976 12151_AT	2024	13652_AT	2068	15153_S_AT
1977 12357_S_AT	2025	13679_S_AT	2069	15170_S_AT
1978 12394_AT	2026	13696_AT	2070	15172_S_AT
1979 12472_S_AT	2027	13702_S_AT	2071	15182_S_AT
1980 12475_AT	2028	13751_AT	2072	15190_S_AT
1981 12482_S_AT	2029	13919_AT	2073	15241_S_AT
1982 12490_AT	2030	13943_AT	2074	15389_AT
1983 12505_S_AT	2031	13950_S_AT	2075	15453_S_AT
1984 12531_AT	2032	14050_AT	2076	15495_AT
1985 12540_S_AT	2033	14055_S_AT	2077	15496_AT
1986 12541_AT		16166_S_AT	2078	15519_S_AT
1987 12577_AT	2034	14067_AT	2079	15562_AT
1988 12594_AT	2035	14078_AT	2080	15580_S_AT
1989 12629_AT	2036	14110_I_AT	2081	15582_S_AT
1990 12642_AT	2037	14144_AT	2082	15638_S_AT
1991 12656_AT	2038	14232_AT		18751_F_AT
1992 12660_AT	2039	14285_AT	2083	15646_S_AT
1993 12712_F_AT	2040	14346_AT	2084	15647_S_AT
1994 12725_R_AT	2041	14432_AT	2085	15654_S_AT
1995 12745_AT	2042	14468_AT	2086	15655_S_AT
1996 12777_I_AT	2043	14479_AT	2087	15658_S_AT
1997 12790_S_AT	2044	14524_S_AT	2088	15670_S_AT
1998 12798_AT	2045	14608_AT	2089	15775_AT
1999 12801_AT	2046	14621_AT	2090	15798_AT
2000 12855_F_AT	2047	14635_S_AT	2091	15930_AT
2001 12887_S_AT		17128_S_AT	2092	15931_AT
2002 12933_R_AT	2048	14640_S_AT	2093	15949_S_AT
2003 12951_AT	2049	14643_S_AT	2094	16017_AT
2004 13005_AT	2050	14663_S_AT	2095	16053_I_AT
2005 13015_S_AT	2051	14668_S_AT	2096	16078_S_AT
2006 13115_AT	2052	14688_S_AT	2097	16086_S_AT
2007 13178_AT		18279_S_AT	2098	16120_S_AT
2008 13228_AT	2053	14737_S_AT	2099	16126_S_AT
2009 13236_S_AT	2054	14768_AT	2100	16150_S_AT
	2055	14875_AT	2101	16159_S_AT
2010 13266_S_AT	2056	14911_S_AT	2102	16230_AT
		17056_S_AT	2103	16306_AT
2011 13275_F_AT	2057	14924_AT	2104	16367_I_AT
2012 13335_AT	2058	14956_S_AT	2105	16417_S_AT
2013 13362_S_AT		15148_S_AT		18083_R_AT
2014 13428_AT		18673_AT	2106	16418_S_AT
2015 13464_AT	2059	14964_AT	2107	16423_AT
2016 13480_AT	2060	15022_AT	2108	16449_S_AT
2017 13538_AT	2061	15040_G_AT	2109	16484_S_AT

TABLE 18 (cont)

2110	16489_AT	2163	18455_AT	2218	20565_AT
2111	16565_S_AT	2164	18459_AT	2219	20570_AT
2112	16596_S_AT	2165	18571_AT	2220	20576_AT
2113	16600_S_AT	2166	18604_AT	2221	20577_AT
2114	16603_S_AT		19181_S_AT	2222	20609_AT
2115	16638_S_AT	2167	18644_AT	2223	20646_AT
2116	16642_S_AT	2168	18745_F_AT	2224	20672_AT
2117	16763_AT		19611_S_AT	2225	20707_S_AT
2118	16914_S_AT	2169	18782_AT	2226	20720_AT
2119	16968_AT	2170	18881_AT		
2120	16983_AT	2171	18904_S_AT		
2121	16989_AT	2172	18914_S_AT		
2122	17002_AT	2173	18963_AT		
2123	17015_S_AT	2174	19068_I_AT		
2124	17040_S_AT	2175	19078_AT		
	18913_S_AT	2176	19171_AT		
2125	17232_AT	2177	19177_AT		
2126	17380_AT	2178	19394_AT		
2127	17394_S_AT	2179	19411_AT		
	20640_S_AT	2180	19415_AT		
2128	17398_AT	2181	19466_S_AT		
2129	17448_AT	2182	19484_S_AT		
2130	17485_S_AT	2183	19549_S_AT		
2131	17490_S_AT	2184	19592_AT		
2132	17499_S_AT	2185	19633_AT		
2133	17505_S_AT	2186	19641_AT		
2134	17516_S_AT	2187	19669_AT		
2135	17529_S_AT	2188	19672_AT		
2136	17543_S_AT	2189	19684_AT		
2137	17593_R_AT	2190	19692_AT		
	19858_S_AT	2191	19746_AT		
2138	17609_AT	2192	19835_AT		
2139	17698_AT	2193	19848_S_AT		
2140	17836_AT	2194	19892_AT		
2141	17886_AT	2195	19904_AT		
2142	17896_AT	2196	19936_AT		
2143	17901_AT	2197	19974_S_AT		
2144	17902_S_AT	2198	19994_AT		
2145	17913_S_AT	2199	20005_S_AT		
2146	17924_AT	2200	20022_AT		
2147	17954_S_AT	2201	20032_AT		
2148	17960_AT	2202	20044_AT		
2149	17991_G_AT	2203	20049_AT		
	18967_S_AT	2204	20081_AT		
2150	17999_AT	2205	20133_I_AT		
2151	18057_I_AT	2206	20155_S_AT		
2152	18078_AT	2207	20163_S_AT		
2153	18091_AT	2208	20200_AT		
2154	18168_S_AT	2209	20296_S_AT		
2155	18252_AT	2210	20336_AT		
2156	18267_AT	2211	20341_AT		
2157	18300_AT	2212	20372_AT		
2158	18308_I_AT	2213	20385_S_AT		
2159	18328_AT	2214	20433_AT		
2160	18354_AT	2215	20489_AT		
2161	18402_AT	2216	20525_AT		
2162	18416_AT	2217	20543_AT		

TABLE 19: 2X UP IN SALT & COLD, ONLY

12004_at	15495_at	18745_f_at
12098_at	15496_at	18904_s_at
12148_at	15519_s_at	18914_s_at
12251_at	15580_s_at	18929_s_at
12357_s_at	15582_s_at	18946_at
12394_at	15776_at	18963_at
12457_at	15798_at	19078_at
12505_s_at	15910_at	19137_at
12522_at	15931_at	19141_at
12541_at	15937_at	19411_at
12594_at	15949_s_at	19641_at
12606_at	15972_s_at	19672_at
12697_at	16048_at	19684_at
12745_at	16086_s_at	19692_at
12781_at	16120_s_at	19746_at
12798_at	16126_s_at	19762_at
12855_f_at	16150_s_at	19869_at
12945_at	16159_s_at	19894_at
12951_at	16230_at	19904_at
13005_at	16306_at	19936_at
13015_s_at	16418_s_at	19994_at
13115_at	16423_at	20005_s_at
13146_s_at	16449_s_at	20031_at
13335_at	16565_s_at	20044_at
13447_s_at	16603_s_at	20382_s_at
13480_at	16763_at	20406_g_at
13544_at	16968_at	20421_at
13549_at	16983_at	20525_at
13580_at	17002_at	20543_at
13649_at	17015_s_at	20565_at
13943_at	17019_s_at	20570_at
13950_s_at	17078_s_at	20640_s_at
14110_i_at	17232_at	20646_at
14144_at	17317_at	20720_at
14224_at	17394_s_at	
14432_at	17516_s_at	
14468_at	17585_s_at	
14479_at	17609_at	
14524_s_at	17690_at	
14640_s_at	17836_at	
14643_s_at	17896_at	
14735_s_at	17899_at	
14737_s_at	17902_s_at	
14768_at	17960_at	
14784_at	17963_at	
14924_at	18168_s_at	
15064_at	18252_at	
15127_s_at	18267_at	
15186_s_at	18308_i_at	
15189_s_at	18354_at	
15255_at	18402_at	
15389_at	18459_at	
15482_at	18484_at	

TABLE 20: 2X DOWN IN COLD & SALT, ONLY

12021_at	15123_s_at	19394_at
12094_at	15153_s_at	19415_at
12128_at	15172_s_at	19466_s_at
12151_at	15190_s_at	19549_s_at
12332_s_at	15211_s_at	19592_at
12472_s_at	15241_s_at	19633_at
12475_at	15437_at	19669_at
12482_s_at	15562_at	19848_s_at
12490_at	15638_s_at	19858_s_at
12531_at	15647_s_at	19878_at
12540_s_at	15654_s_at	19892_at
12577_at	15655_s_at	19974_s_at
12629_at	15658_s_at	20022_at
12642_at	15695_s_at	20032_at
12660_at	15846_at	20049_at
12676_s_at	15930_at	20081_at
12712_f_at	16053_i_at	20155_s_at
12725_r_at	16078_s_at	20163_s_at
12777_i_at	16229_at	20296_s_at
12790_s_at	16465_at	20336_at
12801_at	16484_s_at	20341_at
12887_s_at	16596_s_at	20365_s_at
12933_r_at	16600_s_at	20372_at
13153_r_at	16642_s_at	20489_at
13228_at	16914_s_at	20491_at
13362_s_at	17027_s_at	20576_at
13428_at	17066_s_at	20577_at
13538_at	17083_s_at	20609_at
13565_at	17128_s_at	20672_at
13588_at	17380_at	
13696_at	17398_at	
13702_s_at	17448_at	
13716_at	17485_s_at	
13764_at	17490_s_at	
14050_at	17499_s_at	
14055_s_at	17505_s_at	
14069_at	17514_s_at	
14078_at	17593_r_at	
14232_at	17886_at	
14346_at	17913_s_at	
14608_at	17924_at	
14609_at	17954_s_at	
14621_at	17991_g_at	
14635_s_at	18057_i_at	
14663_s_at	18069_at	
14688_s_at	18328_at	
14691_at	18416_at	
14704_s_at	18604_at	
14875_at	18644_at	
14911_s_at	18881_at	
14964_at	19171_at	
15022_at	19181_s_at	
15085_s_at	19182_at	

TABLE 21

OSMOTIC & SALINE STRESS RESPONSIVE SEQUENCES

SEQ ID NO:	AFFYMETRIX ID NO:	SEQ ID NO:	AFFYMETRIX ID NO:	SEQ ID NO:	AFFYMETRIX ID NO:
2586	12126_S_AT	2634	16073_F_AT	2681	19409_AT
2587	12137_AT	2635	16114_S_AT	2682	19503_AT
2588	12227_AT	2636	16127_S_AT	2683	19826_AT
2589	12239_AT		18744_F_AT	2684	19847_S_AT
2590	12268_AT	2637	16190_AT	2685	19930_AT
2591	12369_AT	2638	16196_AT	2686	19992_AT
2592	12476_AT	2639	16236_G_AT	2687	20096_AT
2593	12484_G_AT		19531_AT	2688	20108_AT
2594	12494_AT	2640	16310_AT	2689	20256_S_AT
2595	12644_AT	2641	16316_AT	2690	20290_S_AT
2596	12645_AT	2642	16334_S_AT	2691	20298_AT
2597	12796_S_AT	2643	16335_AT	2692	20305_AT
2598	12819_AT	2644	16340_AT	2693	20322_AT
2599	12841_AT	2645	16450_S_AT	2694	20333_AT
2600	12852_S_AT	2646	16500_AT	2695	20402_S_AT
	19455_S_AT	2647	16524_AT	2696	20424_AT
2601	13084_AT	2648	16533_AT	2697	20446_S_AT
2602	13171_AT	2649	16690_G_AT	2698	20450_AT
2603	13174_R_AT	2650	16762_AT	2699	20468_AT
2604	13596_AT	2651	16819_AT	2700	20569_S_AT
2605	13807_AT	2652	16873_I_AT	2701	20639_AT
2606	13977_AT	2653	16972_AT	2702	20678_AT
2607	13999_AT	2654	16991_AT	2703	20686_AT
2608	14052_AT	2655	17099_S_AT		
2609	14293_AT	2656	17339_AT		
2610	14335_AT	2657	17397_S_AT		
2611	14486_AT	2658	17419_AT		
2612	14506_AT	2659	17460_AT		
2613	14518_AT	2660	17554_S_AT		
2614	14540_AT	2661	17939_AT		
2615	14578_S_AT	2662	18013_R_AT		
2616	14646_S_AT		18178_S_AT		
2617	14662_F_AT	2663	18024_S_AT		
	15962_S_AT	2664	18032_I_AT		
2618	14901_AT	2665	18054_AT		
2619	14918_AT	2666	18151_AT		
2620	14986_AT	2667	18281_AT		
2621	15053_S_AT	2668	18445_AT		
2622	15179_S_AT	2669	18520_AT		
2623	15252_G_AT	2670	18583_AT		
2624	15280_AT	2671	18663_S_AT		
2625	15467_AT	2672	18753_S_AT		
2626	15607_S_AT	2673	18876_AT		
2627	15625_S_AT	2674	18938_G_AT		
2628	15703_I_AT	2675	18971_AT		
2629	15827_AT	2676	18977_AT		
2630	15863_AT	2677	18981_AT		
2631	15923_AT	2678	19099_AT		
2632	15946_S_AT	2679	19196_AT		
2633	16005_S_AT	2680	19376_AT		

TABLE 22: 2X UP IN SALT & MANNITOL, ONLY

12126_s_at	17548_s_at
12227_at	17554_s_at
12369_at	17961_at
12521_at	18032_i_at
12644_at	18054_at
12645_at	18151_at
12724_f_at	18167_s_at
12795_at	18281_at
12796_s_at	18520_at
12841_at	18663_s_at
12852_s_at	18744_f_at
12958_at	18753_s_at
13014_at	18789_at
13174_r_at	18876_at
13211_s_at	18909_s_at
13596_at	18938_g_at
13640_at	18977_at
13789_at	19099_at
13977_at	19108_at
13999_at	19135_at
14069_at	19227_at
14083_at	19376_at
14089_at	19429_at
14293_at	19455_s_at
14675_s_at	19531_at
15053_s_at	19789_s_at
15058_s_at	19878_at
15252_g_at	20017_at
15280_at	20096_at
15437_at	20256_s_at
15607_s_at	20290_s_at
15625_s_at	20305_at
15827_at	20322_at
15863_at	20333_at
15880_at	20420_at
16005_s_at	20424_at
16031_at	20689_s_at
16073_f_at	
16316_at	
16334_s_at	
16335_at	
16450_s_at	
16500_at	
16524_at	
16533_at	
16597_s_at	
16819_at	
17085_s_at	
17099_s_at	
17339_at	
17419_at	
17442_i_at	
17514_s_at	

TABLE 23: 2X DOWN IN MANNITOL & SALT, ONLY

12239_at	20108_at
12251_at	20298_at
12476_at	20421_at
12484_g_at	20432_at
12494_at	20446_s_at
12561_at	20639_at
12647_s_at	
12719_f_at	
12819_at	
12841_at	
13084_at	
13171_at	
13172_s_at	
13435_at	
13807_at	
14250_r_at	
14335_at	
14486_at	
14506_at	
14518_at	
14901_at	
15046_s_at	
15179_s_at	
15451_at	
15703_i_at	
15946_s_at	
16014_s_at	
16114_s_at	
16310_at	
16342_at	
16712_at	
16762_at	
16972_at	
16991_at	
17397_s_at	
17408_at	
17460_at	
17775_at	
17939_at	
18445_at	
18583_at	
18751_f_at	
18971_at	
18981_at	
19156_s_at	
19196_at	
19359_s_at	
19409_at	
19503_at	
19713_at	
19718_at	
19847_s_at	
19930_at	

TABLE 24

COLD, OSMOTIC & SALINE RESPONSIVE SEQUENCES

SEQ	AFFYMETRIX	SEQ	AFFYMETRIX	SEQ	AFFYMETRIX
ID NO:	ID NO:	ID NO:	ID NO:	ID NO:	ID NO:
1262	12004_AT	1306	12945_AT	1347	13725_AT
1263	12023_S_AT	1307	12958_AT	1348	13764_AT
1264	12078_AT	1308	12964_AT	1349	13771_AT
1265	12115_AT	1309	12968_AT	1350	13789_AT
1266	12118_AT	1310	12972_AT	1351	13916_AT
1267	12150_AT	1311	12989_S_AT	1352	13965_S_AT
1268	12251_AT	1312	13004_AT	1353	13967_AT
1269	12271_S_AT	1313	13014_AT	1354	14028_AT
1270	12276_AT	1314	13025_AT	1355	14039_AT
1271	12332_S_AT	1315	13036_AT	1356	14046_AT
	13211_S_AT	1316	13099_S_AT	1357	14049_AT
1272	12338_AT	1317	13136_AT	1358	14069_AT
1273	12400_AT	1318	13146_S_AT	1359	14077_AT
1274	12430_AT		13239_S_AT	1360	14080_AT
1275	12457_AT	1319	13153_R_AT	1361	14083_AT
1276	12521_AT	1320	13159_AT	1362	14089_AT
1277	12522_AT	1321	13176_AT	1363	14090_I_AT
1278	12530_AT	1322	13217_S_AT	1364	14097_AT
1279	12536_S_AT		17500_S_AT	1365	14116_AT
1280	12538_AT	1323	13225_S_AT	1366	14151_AT
1281	12561_AT		15997_S_AT		14219_AT
1282	12574_AT	1324	13230_S_AT	1367	14170_AT
	19019_I_AT		15972_S_AT	1368	14172_AT
1283	12595_AT	1325	13279_S_AT	1369	14192_AT
1284	12606_AT		17477_S_AT	1370	14224_AT
1285	12609_AT	1326	13280_S_AT	1371	14227_AT
1286	12622_AT		20301_S_AT	1372	14244_S_AT
1287	12630_AT	1327	13282_S_AT		14245_AT
			17027_S_AT		14645_S_AT
1288	12647_S_AT				15974_G_AT
1289	12676_S_AT	1328	13426_AT		
1290	12697_AT	1329	13432_AT	1373	14248_AT
1291	12698_AT	1330	13435_AT	1374	14250_R_AT
1292	12719_F_AT	1331	13447_S_AT	1375	14367_AT
1293	12724_F_AT	1332	13474_AT	1376	14381_AT
	15871_S_AT	1333	13511_AT	1377	14384_AT
	16597_S_AT	1334	13546_AT	1378	14398_S_AT
1294	12749_AT	1335	13547_S_AT	1379	14487_AT
1295	12765_AT	1336	13548_AT	1380	14582_AT
1296	12769_AT	1337	13555_AT	1381	14597_AT
1297	12781_AT	1338	13587_AT	1382	14609_AT
1298	12785_AT	1339	13595_AT	1383	14612_AT
1299	12792_S_AT	1340	13610_S_AT		19267_S_AT
1300	12795_AT	1341	13627_AT	1384	14614_AT
1301	12805_S_AT	1342	13640_AT	1385	14636_S_AT
1302	12857_AT	1343	13645_AT	1386	14644_S_AT
1303	12883_S_AT	1344	13647_AT		14658_S_AT
1304	12909_S_AT	1345	13706_S_AT		14659_S_AT
	16539_S_AT		19701_S_AT		15964_S_AT
1305	12932_S_AT	1346	13716_AT	1387	14675_S_AT
	15605_S_AT		18228_AT		

TABLE 24 (cont)

1388	14691_AT	1443	15753_AT	1496	16789_AT
	14709_AT	1444	15761_AT	1497	16818_S_AT
1389	14704_S_AT	1445	15776_AT	1498	16971_S_AT
	15846_AT	1446	15778_AT	1499	17018_S_AT
1390	14705_I_AT	1447	15839_AT	1500	17019_S_AT
1391	14733_S_AT	1448	15842_AT	1501	17029_S_AT
1392	14735_S_AT	1449	15857_S_AT	1502	17041_S_AT
1393	14779_AT	1450	15859_AT	1503	17047_S_AT
1394	14784_AT	1451	15880_AT	1504	17066_S_AT
1395	14923_AT	1452	15886_AT	1505	17085_S_AT
1396	14947_AT	1453	15906_S_AT	1506	17089_S_AT
1397	14950_AT	1454	15910_AT	1507	17179_AT
1398	14990_AT	1455	15937_AT	1508	17180_AT
1399	14998_AT	1456	15957_AT	1509	17228_AT
1400	15005_S_AT	1457	15970_S_AT	1510	17252_AT
1401	15018_AT	1458	15985_AT	1511	17317_AT
1402	15045_AT	1459	16010_S_AT	1512	17338_AT
1403	15046_S_AT		16011_S_AT	1513	17384_AT
1404	15052_AT		17078_S_AT	1514	17387_S_AT
1405	15058_S_AT	1460	16021_S_AT	1515	17400_S_AT
1406	15064_AT	1461	16031_AT	1516	17407_S_AT
1407	15088_S_AT	1462	16038_S_AT	1517	17408_AT
1408	15098_S_AT	1463	16045_S_AT	1518	17413_S_AT
1409	15103_S_AT	1464	16046_S_AT	1519	17416_AT
1410	15109_S_AT	1465	16048_AT	1520	17425_S_AT
1411	15124_S_AT	1466	16061_S_AT	1521	17440_I_AT
1412	15127_S_AT	1467	16082_S_AT	1522	17442_I_AT
1413	15145_S_AT	1468	16111_F_AT	1523	17473_AT
1414	15154_S_AT	1469	16115_S_AT	1524	17484_AT
1415	15161_S_AT	1470	16141_S_AT	1525	17514_S_AT
1416	15189_S_AT	1471	16144_S_AT	1526	17520_S_AT
1417	15214_S_AT	1472	16163_S_AT	1527	17533_S_AT
1418	15255_AT	1473	16173_S_AT	1528	17548_S_AT
1419	15356_AT	1474	16229_AT		19614_AT
1420	15357_AT	1475	16298_AT	1529	17549_S_AT
1421	15364_AT	1476	16301_S_AT	1530	17555_S_AT
1422	15392_AT	1477	16322_AT	1531	17567_AT
1423	15403_S_AT	1478	16342_AT	1532	17654_AT
1424	15437_AT	1479	16351_AT	1533	17693_AT
1425	15451_AT	1480	16412_S_AT	1534	17697_AT
1426	15476_AT	1481	16422_AT	1535	17722_AT
1427	15482_AT	1482	16427_AT	1536	17752_AT
1428	15483_S_AT	1483	16438_AT	1537	17755_AT
1429	15521_S_AT	1484	16474_S_AT	1538	17775_AT
1430	15522_I_AT	1485	16482_S_AT	1539	17832_S_AT
1431	15531_I_AT	1486	16485_S_AT	1540	17840_S_AT
1432	15573_AT		18052_S_AT	1541	17843_S_AT
1433	15581_S_AT	1487	16493_AT	1542	17855_AT
1434	15586_S_AT	1488	16534_S_AT	1543	17860_AT
1435	15594_S_AT	1489	16555_S_AT	1544	17869_AT
1436	15609_S_AT	1490	16561_S_AT	1545	17888_AT
1437	15611_S_AT		17572_S_AT	1546	17899_AT
1438	15621_F_AT	1491	16592_S_AT	1547	17929_S_AT
1439	15623_F_AT	1492	16615_S_AT	1548	17930_S_AT
1440	15669_S_AT	1493	16637_S_AT	1549	17932_S_AT
1441	15695_S_AT	1494	16692_AT	1550	17936_S_AT
1442	15702_S_AT	1495	16712_AT		18670_G_AT

TABLE 24 (cont)

1551	17957_AT	1606	19152_AT	1663	20040_AT
1552	17961_AT	1607	19156_S_AT	1664	20042_S_AT
1553	17962_AT	1608	19182_AT	1665	20060_AT
1554	17963_AT	1609	19186_S_AT		20438_AT
1555	17971_S_AT	1610	19214_AT	1666	20089_AT
1556	17975_AT	1611	19216_AT	1667	20118_AT
	18742_F_AT	1612	19227_AT	1668	20144_AT
1557	18016_R_AT	1613	19243_AT	1669	20149_AT
1558	18069_AT	1614	19288_AT	1670	20179_AT
1559	18122_AT	1615	19359_S_AT	1671	20190_AT
1560	18140_AT	1616	19368_AT	1672	20194_AT
1561	18199_AT	1617	19379_AT	1673	20219_AT
1562	18224_S_AT	1618	19380_S_AT	1674	20245_S_AT
1563	18225_AT	1619	19398_AT	1675	20263_AT
1564	18235_AT	1620	19421_AT	1676	20308_S_AT
1565	18259_S_AT	1621	19424_AT	1677	20335_S_AT
1566	18265_AT	1622	19429_AT	1678	20338_AT
1567	18270_AT1568	1623	19430_AT	1679	20345_AT
	18280_AT	1624	19450_AT	1680	20365_S_AT
1569	18289_AT	1625	19457_AT	1681	20382_S_AT
1570	18296_AT	1626	19467_AT	1682	20390_S_AT
1571	18298_AT	1627	19516_AT	1683	20395_AT
1572	18314_I_AT	1628	19545_AT	1684	20420_AT
1573	18318_AT	1629	19564_AT	1685	20421_AT
1574	18325_AT	1630	19577_AT	1686	20432_AT
1575	18351_S_AT	1631	19593_AT	1687	20437_AT
1576	18471_AT	1632	19602_AT	1688	20442_I_AT
1577	18482_S_AT	1633	19618_AT	1689	20463_S_AT
1578	18484_AT	1634	19638_AT	1690	20491_AT
1579	18560_AT	1635	19640_AT	1691	20537_AT
1580	18564_AT	1636	19646_S_AT	1692	20573_AT
1581	18590_AT	1637	19656_S_AT	1693	20636_AT
1582	18594_AT	1638	19670_AT	1694	20638_AT
1583	18595_AT	1639	19696_AT	1695	20641_AT
1584	18596_AT	1640	19713_AT	1696	20658_S_AT
1585	18629_S_AT	1641	19718_AT	1697	20689_S_AT
1586	18637_AT	1642	19722_S_AT	1698	20698_S_AT
1587	18661_AT	1643	19749_AT		
1588	18668_AT	1644	19755_AT		
1589	18699_I_AT	1645	19762_AT		
1590	18747_F_AT	1646	19789_S_AT		
	18789_AT	1647	19815_AT		
1591	18761_AT	1648	19843_AT		
1592	18833_AT	1649	19869_AT		
1593	18875_S_AT	1650	19878_AT		
1594	18894_AT	1651	19883_AT		
1595	18936_AT	1652	19894_AT		
1596	18946_AT	1653	19926_AT		
1597	18953_AT	1654	19944_AT		
1598	18955_AT	1655	19968_AT		
1599	18972_AT	1656	19977_AT		
1600	19008_S_AT	1657	19982_AT		
1601	19108_AT	1658	19987_AT		
1602	19123_AT	1659	19991_AT		
1603	19135_AT	1660	20015_AT		
1604	19137_AT	1661	20017_AT		
1605	19141_AT	1662	20031_AT		

TABLE 25: 2X UP IN COLD, SALT & MANNITOL

12023_s_at	14733_s_at	17047_s_at	19640_at
12332_s_at	14923_at	17179_at	19646_s_at
12530_at	14990_at	17180_at	19656_s_at
12536_s_at	15005_s_at	17252_at	19701_s_at
12574_at	15018_at	17384_at	19843_at
12595_at	15052_at	17407_s_at	19944_at
12698_at	15088_s_at	17484_at	19982_at
12749_at	15098_s_at	17520_s_at	19987_at
12765_at	15103_s_at	17555_s_at	19991_at
12769_at	15145_s_at	17572_s_at	20042_s_at
12785_at	15154_s_at	17722_at	20060_at
12857_at	15161_s_at	17752_at	20118_at
12964_at	15214_s_at	17840_s_at	20144_at
12972_at	15356_at	17843_s_at	20149_at
12989_s_at	15521_s_at	17860_at	20179_at
13004_at	15573_at	17929_s_at	20194_at
13025_at	15586_s_at	17936_s_at	20245_s_at
13036_at	15609_s_at	17962_at	20390_s_at
13099_s_at	15611_s_at	18052_s_at	20437_at
13136_at	15621_f_at	18069_at	20463_s_at
13176_at	15669_s_at	18122_at	20491_at
13220_s_at	15695_s_at	18199_at	20641_at
13225_s_at	15753_at	18259_s_at	20658_s_at
13230_s_at	15761_at	18280_at	
13239_s_at	15857_s_at	18289_at	
13426_at	15871_s_at	18314_i_at	
13474_at	15964_s_at	18318_at	
13548_at	15970_s_at	18325_at	
13555_at	15974_g_at	18482_s_at	
13595_at	15997_s_at	18590_at	
13627_at	16011_s_at	18594_at	
13645_at	16021_s_at	18595_at	
13647_at	16038_s_at	18596_at	
13706_s_at	16046_s_at	18629_s_at	
13965_s_at	16082_s_at	18661_at	
13967_at	16111_f_at	18668_at	
14080_at	16115_s_at	18699_i_at	
14090_i_at	16127_s_at	18722_s_at	
14097_at	16141_s_at	18936_at	
14116_at	16144_s_at	18953_at	
14151_at	16163_s_at	18955_at	
14172_at	16236_g_at	18972_at	
14192_at	16301_s_at	19008_s_at	
14244_s_at	16322_at	19152_at	
14245_at	16422_at	19186_s_at	
14367_at	16474_s_at	19214_at	
14398_s_at	16482_s_at	19368_at	
14582_at	16485_s_at	19379_at	
14614_at	16555_s_at	19380_s_at	
14644_s_at	16561_s_at	19421_at	
14645_s_at	16592_s_at	19545_at	
14658_s_at	16637_s_at	19614_at	
14659_s_at	17041_s_at	19638_at	

TABLE 26: 2X DOWN IN COLD, MANNITOL & SALT, ONLY

12078_at	15189_s_at	17869_at	20015_at
12115_at	15357_at	17888_at	20040_at
12118_at	15364_at	17930_s_at	20089_at
12150_at	15403_s_at	17932_s_at	20190_at
12271_s_at	15476_at	17957_at	20219_at
12276_at	15483_s_at	17963_at	20263_at
12338_at	15522_i_at	17971_s_at	20301_s_at
12400_at	15531_i_at	17975_at	20308_s_at
12430_at	15594_s_at	18016_r_at	20338_at
12538_at	15702_s_at	18140_at	20345_at
12622_at	15778_at	18224_s_at	20395_at
12630_at	15839_at	18225_at	20442_i_at
12792_s_at	15842_at	18228_at	20537_at
12805_s_at	15859_at	18235_at	20573_at
12883_s_at	15872_at	18265_at	20636_at
12909_s_at	15880_at	18270_at	20638_at
12932_s_at	15886_at	18296_at	20698_s_at
12968_at	15906_s_at	18298_at	
13159_at	15957_at	18471_at	
13217_s_at	15985_at	18564_at	
13279_s_at	16045_s_at	18637_at	
13282_s_at	16061_s_at	18742_f_at	
13432_at	16173_s_at	18761_at	
13511_at	16298_at	18833_at	
13546_at	16351_at	18875_s_at	
13547_s_at	16412_s_at	18894_at	
13587_at	16438_at	18946_at	
13610_s_at	16493_at	19123_at	
13640_at	16534_s_at	19216_at	
13725_at	16539_s_at	19243_at	
13771_at	16615_s_at	19267_s_at	
13916_at	16692_at	19288_at	
14028_at	16789_at	19398_at	
14039_at	16818_s_at	19424_at	
14046_at	16971_s_at	19430_at	
14049_at	17016_s_at	19450_at	
14077_at	17029_s_at	19457_at	
14170_at	17089_s_at	19467_at	
14227_at	17228_at	19516_at	
14248_at	17338_at	19564_at	
14381_at	17387_s_at	19577_at	
14384_at	17413_s_at	19593_at	
14487_at	17416_at	19602_at	
14597_at	17425_s_at	19618_at	
14705_i_at	17440_i_at	19670_at	
14709_at	17473_at	19696_at	
14779_at	17533_s_at	19722_s_at	
14947_at	17549_s_at	19749_at	
14950_at	17654_at	19755_at	
14998_at	17693_at	19815_at	
15045_at	17697_at	19926_at	
15109_s_at	17755_at	19968_at	
15124_s_at	17832_s_at	19977_at	

TABLE 27: 2X ROOT SPECIFIC (COLB, SALINE & OSMOTIC STRESSES)

11997_at	14069_at	16052_at	18327_s_at
12004_at	14072_at	16053_i_at	18597_at
12051_at	14073_at	16105_s_at	18607_s_at
12072_at	14097_at	16161_s_at	18636_at
12150_at	14139_at	16165_s_at	18663_s_at
12151_at	14235_at	16298_at	18782_at
12166_i_at	14250_r_at	16334_s_at	18885_at
12219_at	14578_s_at	16422_at	18888_at
12315_at	14582_at	16427_at	18942_at
12332_s_at	14640_s_at	16440_s_at	18955_at
12374_i_at	14643_s_at	16442_s_at	19060_at
12482_s_at	14644_s_at	16468_at	19108_at
12515_at	14658_s_at	16488_at	19135_at
12522_at	14659_s_at	16511_at	19137_at
12538_at	14711_s_at	16529_at	19195_at
12571_s_at	14900_at	16553_f_at	19263_at
12574_at	14924_at	16568_s_at	19376_at
12609_at	14990_at	16914_s_at	19406_at
12678_i_at	15018_at	16965_s_at	19432_s_at
12698_at	15022_at	16981_s_at	19835_at
12749_at	15107_s_at	16989_at	19836_at
12760_g_at	15116_f_at	17033_s_at	19840_s_at
12765_at	15120_s_at	17066_s_at	19841_at
12768_at	15124_s_at	17085_s_at	19843_at
12769_at	15131_s_at	17252_at	19926_at
12772_at	15132_s_at	17376_at	19972_at
12777_i_at	15137_s_at	17378_at	19977_at
12958_at	15184_s_at	17388_at	19991_at
12989_s_at	15188_s_at	17415_at	20034_i_at
13015_s_at	15208_s_at	17429_s_at	20042_s_at
13134_s_at	15252_g_at	17463_at	20189_at
13146_s_at	15343_at	17485_s_at	20194_at
13172_s_at	15389_at	17490_s_at	20200_at
13178_at	15392_at	17567_at	20214_i_at
13179_at	15448_at	17585_s_at	20239_g_at
13187_i_at	15503_at	17595_s_at	20262_at
13211_s_at	15531_i_at	17840_s_at	20269_at
13239_s_at	15594_s_at	17860_at	20294_at
13273_s_at	15609_s_at	17880_s_at	20312_s_at
13297_s_at	15623_f_at	17894_at	20382_s_at
13549_at	15639_s_at	17896_at	20396_at
13604_at	15670_s_at	17899_at	20432_at
13629_s_at	15680_s_at	17911_at	20444_at
13706_s_at	15859_at	17935_at	20446_s_at
13714_at	15900_at	17961_at	20480_s_at
13751_at	15923_at	18024_s_at	20586_i_at
13895_at	15962_s_at	18122_at	20612_s_at
13933_at	15964_s_at	18222_at	20672_at
13967_at	15965_at	18224_s_at	20686_at
13985_s_at	15975_s_at	18252_at	20689_s_at
14028_at	15985_at	18255_at	
14030_at	16001_at	18269_s_at	
14058_at	16048_at	18270_at	

TABLE 28: 2X LEAF SPECIFIC (COLD, SALINE & OSMOTIC STRESSES)

12169_i_at	16136_s_at
12186_at	16172_s_at
12187_at	16316_at
12211_at	16385_s_at
12212_at	16455_at
12214_g_at	16485_s_at
12270_at	16512_s_at
12645_at	16547_s_at
12754_g_at	16548_s_at
12774_at	16629_s_at
12793_at	16673_at
12796_s_at	16899_at
12910_s_at	17010_s_at
12916_s_at	17018_s_at
12953_at	17054_s_at
13090_at	17095_s_at
13124_at	17097_s_at
13335_at	17273_at
13550_at	17394_s_at
13567_at	17420_at
13568_at	17449_s_at
13596_at	17600_s_at
13614_at	17843_s_at
13678_s_at	17913_s_at
13719_at	17966_at
14014_at	18003_at
14096_at	18081_at
14118_i_at	18560_at
14369_at	18588_at
14478_at	18626_at
14513_s_at	18644_at
14540_at	18666_s_at
14596_at	18742_f_at
14733_s_at	18977_at
14986_at	18994_at
15045_at	19227_at
15097_s_at	19373_at
15098_s_at	19834_at
15145_s_at	19867_at
15153_s_at	19996_at
15154_s_at	20062_at
15182_s_at	20199_at
15203_s_at	20256_s_at
15372_at	20284_at
15521_s_at	20437_at
15581_s_at	20442_i_at
15621_f_at	20450_at
15642_s_at	20468_at
15776_at	20547_at
15910_at	20635_s_at
16017_at	
16046_s_at	
16115_s_at	

TABLE 29: 2X TRANSCRIPTION (COLD, SALINE & OSMOTIC STRESSES)

12068_at	15665_s_at	19836_at
12166_i_at	15679_s_at	19860_at
12374_i_at	15720_at	19866_at
12392_at	15871_s_at	19898_at
12431_at	16072_s_at	20262_at
12450_s_at	16073_f_at	20335_s_at
12503_at	16105_s_at	20362_at
12536_s_at	16111_f_at	20424_at
12540_s_at	16127_s_at	20437_at
12541_at	16534_s_at	20456_at
12587_at	16582_s_at	20515_s_at
12594_at	16589_s_at	20635_s_at
12595_at	16747_at	
12704_f_at	17019_s_at	
12705_f_at	17129_s_at	
12709_f_at	17160_at	
12712_f_at	17520_s_at	
12719_f_at	17538_s_at	
12724_f_at	17555_s_at	
12725_r_at	17609_at	
12726_f_at	17896_at	
12734_f_at	17971_s_at	
12736_f_at	17975_at	
12737_f_at	17978_s_at	
12812_at	18121_s_at	
12949_at	18167_s_at	
12951_at	18197_at	
12966_s_at	18222_at	
13023_at	18318_at	
13034_s_at	18576_s_at	
13087_at	18629_s_at	
13270_at	18738_f_at	
13273_s_at	18742_f_at	
13432_at	18744_f_at	
13555_at	18745_f_at	
13688_s_at	18747_f_at	
13714_at	18750_f_at	
13965_s_at	18751_f_at	
13987_s_at	18789_at	
14003_at	18834_at	
14144_at	18942_at	
14178_at	19083_at	
14223_at	19202_at	
14235_at	19209_s_at	
14303_s_at	19232_s_at	
14393_at	19315_at	
14553_at	19489_s_at	
14781_at	19611_s_at	
15046_s_at	19646_s_at	
15053_s_at	19707_s_at	
15214_s_at	19722_s_at	
15510_r_at	19744_at	
15638_s_at	19755_at	

TABLE 30: 2X PHOSPHATES (COLD, SALINE & OSMOTIC STRESSES)

12470_at
12556_at
13128_at
13135_s_at
13180_s_at
13192_s_at
13193_s_at
13587_at
13995_at
14335_at
15073_at
15171_s_at
15240_at
15586_s_at
15641_s_at
15651_f_at
15990_at
16232_s_at
16576_f_at
16753_at
17423_s_at
17525_s_at
17537_s_at
17929_s_at
17954_s_at
18012_s_at
18308_i_at
18616_at
18847_at
18936_at
18980_at
19243_at
19263_at
19638_at
19883_at
19932_at
20333_at
20393_at
20570_at

TABLE 31: 2X KINASES (COLD, SALINE & OSMOTIC STRESSES)

12253_g_at	16059_s_at	20144_at
12270_at	16087_s_at	20219_at
12271_s_at	16088_f_at	20223_at
12276_at	16125_s_at	20232_s_at
12278_at	16137_s_at	20235_i_at
12284_at	16140_s_at	20282_s_at
12300_at	16143_s_at	20298_at
12307_at	16144_s_at	20396_at
12353_at	16160_f_at	20439_at
12357_s_at	16171_s_at	20462_at
12390_at	16357_at	
12394_at	16412_s_at	
12395_s_at	16568_s_at	
12408_at	16570_s_at	
12452_at	16571_s_at	
12477_at	16584_s_at	
12490_at	16651_s_at	
12497_at	16652_s_at	
12532_at	16672_at	
12697_at	16818_s_at	
12901_s_at	16840_at	
12902_at	17068_s_at	
12958_at	17122_s_at	
12959_at	17252_at	
13068_at	17323_at	
13246_at	17475_at	
13324_at	17752_at	
13332_at	17921_s_at	
13362_s_at	17933_at	
13370_at	17935_at	
13550_at	18013_r_at	
14030_at	18046_s_at	
14048_at	18122_at	
14194_at	18176_at	
14196_at	18316_at	
14217_at	18455_at	
14459_at	18459_at	
14603_at	18482_s_at	
14637_s_at	18543_at	
14686_s_at	18706_s_at	
15005_s_at	18782_at	
15175_s_at	18924_at	
15270_at	19117_s_at	
15475_s_at	19437_s_at	
15497_s_at	19442_at	
15577_s_at	19458_at	
15616_s_at	19464_at	
15633_s_at	19469_at	
15634_s_at	19562_at	
15668_s_at	19655_at	
15680_s_at	19749_at	
15798_at	19854_at	
16034_at	19904_at	

U37133	AMC49123.1	Oriza sativa	U20948	ARC23542.1	Ipomoea trifida
U72723	AA80225.1	Oriza longistaminata	Y12531	CAA71334.1	Brassica oleracea
AF172282	AF34426.1	Oriza sativa	X9520	CAA67145.1	Brassica oleracea
CAC20842.1	APJ50467	Pinus sylvestris	AB000970	BAA23676.1	Brassica rapa
BAA83373.1	AP000391	Oriza sativa	AB002473	BAA92836.1	Brassica oleracea
AP000559	BAA84787.1	Oriza sativa	AB024479	CBM91179.1	Brassica napus subsp. nap
U72724	ABM8756.1	Oriza sativa	M97667	AB033008.1	Brassica napus
AF244869	AA81323.1	Glycine max	AB032474	BAA92837.1	Brassica oleracea
AF053127	AAAC36318.1	Malus x domestica	Y18260	CBM41879.1	Brassica oleracea
AF244890	AA81324.1	Glycine max	Y18921	CAA79355.1	Brassica oleracea
AF91322.1	AF244888	Glycine max	D88193	BAA21132.1	Brassica oleracea
AA859905.1	AF197946	Glycine max	D30049	BAA66285.1	Brassica rapa
AF197947	AA859906.1	Glycine max	U00443	AAA62232.1	Brassica napus
Y78888	AA836558.1	Ipomoea nil	Y14286	CAA74662.1	Brassica napus
X89226	CBM61510.1	Oriza sativa	Y18259	CBM41878.1	Brassica oleracea
AB02726	AA82753.1	Oriza longistaminata	M76647	AAA33000.1	Brassica oleracea
AB029327	AA866536.1	Nicotiana tabacum	D38564	BAA07577.2	Brassica oleracea
U77888	AA82992.1	Ipomoea nil	D38563	BAA07576.1	Brassica rapa
U93048	ABM61708.1	Daucus carota	AB054061	BAE21001.1	Brassica rapa
			U82481	RAE93834.1	Zea mays
SEQ ID NO. 50			AA821872.1	AA821872.1	Phaseolus vulgaris
BAE22559.1	AB007503	Glycine max	AF078082	AF078082	Nicotiana tabacum
BAE24289.1	AB010148	Panax ginseng	AF086885	AF086885	Oriza sativa
BAE13084.1	D86410	Glycyrrhiza glabra	AAF34428.1	AAF34428.1	
D86409	BAE13083.1	Glycyrrhiza glabra	SEQ ID NO. 52		
U60057	AA808578.1	Nicotiana tabacum	BAE61708.1	U93048	Daucus carota
AF124842	AA820626.1	Capiscum annuum	BAE93373.1	AF000391	Oriza sativa
AB022599	BAE20626.1	Solanum tuberosum	BAE44787.1	AF000359	Oriza sativa
U46000	AAA87048.1	Nicotiana benthamiana	AA852992.1	U77888	Ipomoea nil
AF302464	AA814896.1	Artemisia annua	AA851322.1	AF244888	Glycine max
BAE22558.1	AF302464	Zea mays	AA851323.1	AF244889	Glycine max
AB007502	AA807501	Oriza sativa	AA821365.1	AF028699	Brassica napus
U59683	AA802945.1	Nicotiana tabacum	AA851506.1	AF197947	Glycine max
AF205791	AA820201.1	Betrootococcus braunii	CAE61510.1	X89226	Oriza sativa
AF071269.1	AA8571269.1	Citrus sinensis	AA836558.1	AF197946	Ipomoea nil
AA856387.1	AA856387.1	Artemisia annua	AA859905.1	AF073405	Glycine max
AA863235.1	AA863235.1	Betrootococcus braunii	AA803090.1	AF172282	Oriza sativa
SEQ ID NO. 51			AA834426.1	L27821	Oriza sativa
CAA71333.1	Y12530	Brassica oleracea	AA833915.1	AF078082	Phaseolus vulgaris
CAA74661.1	Y14285	Brassica oleracea	AA816628.1	AY007545	Brassica napus

CAR94692.1	AJ242742	Ipomoea batatas	CAR56742.1	AJ249800	Cicer arietinum
CAR62226.1	X90693	Medicago sativa	AAG09208.1	AF175278	Pisum sativum
BA11413.1	D90115	Amoracia rusticana	AAC49188.2	U29333	Pisum sativum
AB02354.1	L37790	Stylosanthes humilis	AAA2913.1	M22885	Persea americana
CAR66036.1	X97350	Populus balsamifera subsp. trichocarpa	AAC56282.1	AF154332	Petunia x hybrida
BA11852.1	D83224	Populus nigra	AAC39454.1	AF014802	Eschscholzia californica
BA11853.1	D83225	Populus nigra	AAC29894.1	AB006790	Petunia x hybrida
BA07241.1	D38051	Populus kitakamiensis	BA12159.1	D83968	Glycine max
AAC05277.1	AF049881	Linum usitatissimum	CAR65580.1	X96784	Nicotiana tabacum
CAR66035.1	X97349	Populus balsamifera subsp. trichocarpa	AB94587.1	AF022458	Glycine max
AD37427.1	AF149277	Phaseolus vulgaris	RAA22423.1	AB001380	Glycyrrhiza echinata
AA06183.1	M37636	Arachis hypogaea	RAA74466.1	AS022733	Glycyrrhiza echinata
AAA34108.1	J02579	Nicotiana tabacum	AG44132.1	D18296	Pisum sativum
CAR62227.1	X90694	Medicago sativa	BA13076.1	AB023152	Torenia hybrida
BA01992.1	D11396	Nicotiana tabacum	RAA38030.1	AF135485	Glycine max
RAA02967.1	AF001551	Oryza sativa	CAR64635.1	X95342	Nicotiana tabacum
CAR40796.1	X57564	Amoracia rusticana	RAA6743.1	AJ249801	Cicer arietinum
AC98519.1	AF007211	Glycine max	CAR5024.1	AB037245	Asparagus officinalis
CAR71493.1	Y10467	Spinacia oleracea	SEQ ID NO. 62		
CAR6223.1	X90692	Medicago sativa	CAR12395.1	AJ225087	Vigna unguiculata
CAR5097.1	X17593	Lycopersicon esculentum	CAR36556.1	X52321	Hordeum vulgare
CAR67121.1	Y19023	Lycopersicon esculentum	AAG25637.1	AF300799	Hordeum vulgare
AC49819.1	AF014468	Oryza sativa	AAC57245.1	AF061203	Hordeum vulgare
BA08499.1	D49551	Oryza sativa	AAG25638.1	AF300800	Hordeum vulgare
RAA01877.1	D11102	Populus kitakamiensis	BA039391.1	AB048949	Hordeum vulgare
CAR59487.1	X95230	Triticum aestivum	AAK30294.1	AF353207	Castanea crenata
AF014502		Glycine max	BA04915.1	D21349	Hordeum vulgare
BA077388.1	AB024438	Scutellaria baicalensis	BA08741.1	D49999	Hordeum vulgare
			AAC67246.1	AF061204	Hordeum vulgare subsp. spontaneum
SEQ ID NO. 61			CRC16789.1	AJ301645	Hordeum vulgare
CAR43505.1	AJ239051	Cicer arietinum	AF04259.1	AF043098	Trifolium repens
BA093634.1	AB025016	Lotus japonicus	BA02286.1	D12882	Ipomoea batatas
RAA74465.1	AB022732	Glycyrrhiza echinata	RA04186.1	AF026217	Medicago sativa
BA22422.1	AB001379	Glycyrrhiza echinata	BA049462.1	D50866	Glycine max
CA110067.1	AJ012581	Cicer arietinum	BA020453.1	AB004271	Glycine max
CAR41490.1	AJ300439	Cicer arietinum	AAG44882.1	AF284857	Calystegia sepium
CAR04117.1	AJ300047	Helianthus tuberosus	CAR67128.1	X98504	Triticum aestivum
CAR04116.1	AJ000477	Helianthus tuberosus	AAA33898.1	L10345	Oryza sativa
AA594590.1	AF022461	Glycine max			

CAA52895.1	X74941	Lycopersicon esculentum	SEQ ID NO. 68		
ADA24938.1	AF084972	Catharanthus roseus	BA080859.1	AF122051	Solanum tuberosum
CAA71768.1	Y10809	Petroselinum crispum	BA080860.1	AF122052	Solanum tuberosum
AA00169.1	U10270	Zea mays	BA080861.1	AF122053	Solanum tuberosum
CAA71770.1	Y10810	Petroselinum crispum	BA080862.1	AF122054	Adiantum raddianum
ABA40291.1	U42208	Oryza sativa	BA080863.1	AF122055	Adiantum raddianum
CAA58772.1	X83920	Brassica napus	BA080864.1	AF122056	Oryza sativa
CAA88492.1	Z48602	Nicotiana tabacum	BA080865.1	AF122057	Oryza sativa
CAB62402.1	Y15165	Zea mays	BA080866.1	AF122058	Oryza sativa
BA110928.1	D64051	Triticum aestivum	BA080867.1	AF122059	Oryza sativa
ACA49398.1	U46217	Petroselinum crispum	BA080868.1	AF122060	Oryza sativa
CAA76555.1	Y16953	Sinapis alba	BA081731.1	Y11414	Secale cereale
ADA42937.1	AF084971	Catharanthus roseus	BA081732.1	Y11415	Secale cereale
CAA88493.1	Z48503	Nicotiana tabacum	BA081733.2	AB029160	Glycine max
CAA63073.1	X92102	Raphanus sativus	BA081736.1	AB029161	Glycine max
AA117488.1	U07933	Triticum aestivum	BA081737.1	Y11415	Glycine max
CAA52897.1	X74943	Lycopersicon esculentum	BA081738.1	Y11350	Glycine max
AA000098.1	U01449	Glycine max	BA081739.1	Y11350	Glycine max
AAA68429.1	M63999	Triticum aestivum	BA081740.1	Y11350	Glycine max
AA119103.1	U10466	Triticum aestivum	BA081741.1	Y11350	Glycine max
AA119104.1	U10467	Triticum aestivum	BA081742.1	Y11350	Glycine max
ACA49558.1	U04297	Oryza sativa	BA081743.1	Y11350	Glycine max
SEQ ID NO. 67					
CAA10608.1	AJ132228	Ricinus communis	BA081744.1	Y11350	Glycine max
CAA70778.1	Y09591	Vicia faba	BA081745.1	Y11350	Glycine max
CAA07563.1	AJ007574	Ricinus communis	BA081746.1	Y11350	Glycine max
AA116014.1	AF080543	Nepenthes alata	BA081747.1	Y11350	Glycine max
CAA70969.1	Y09826	Solanum tuberosum	BA081748.1	Y11350	Glycine max
AA116015.1	AF080544	Nepenthes alata	BA081749.1	Y11350	Glycine max
CAA70968.1	Y09825	Solanum tuberosum	BA081750.1	Y11350	Glycine max
CAA92992.1	Z68759	Ricinus communis	BA081751.1	Y11350	Glycine max
AA116013.1	AF080542	Nepenthes alata	BA081752.1	Y11350	Glycine max
AA115945.1	AF061435	Vicia faba	BA081753.1	Y11350	Glycine max
CAA72006.1	Y11121	Ricinus communis	BA081754.1	Y11350	Glycine max
AA115944.1	AF061434	Vicia faba	BA081755.1	Y11350	Glycine max
AA115946.1	AF061436	Vicia faba	BA081756.1	Y11350	Glycine max
AA115947.1	U64823	Nicotiana sylvestris	BA081757.1	Y11350	Glycine max
BA115948.1	U31932	Nicotiana sylvestris	BA081758.1	Y11350	Glycine max
AA115949.1	U31933	Oryza sativa	BA081759.1	Y11350	Glycine max
CAA93437.1	AB022783	Chlorella protothecoides	BA081760.1	Y11350	Glycine max
CBA24599.1	AJ238635		BA081761.1	Y11350	Glycine max

BA013689.1	AB011968	Oryza sativa	CAA95859.1	271276	Mangifera indica
BA083688.1	AB011967	Oryza sativa	CAA55865.1	X79278	Medicago sativa
BA022219.1	AF141378	Zea mays	BA002111.1	D12543	Pisum sativum
BA034675.1	AB011670	Triticum aestivum	BA089049.1	Z49190	Beta vulgaris
BA062693.1	AF004947	Oryza sativa	CAA98179.1	273951	Lotus japonicus
BA036449.1	D28602	Nicotiana tabacum	BA002437.1	D13132	Oryza sativa
BA071142.1	Y10036	Cucumis sativus	CAA98177.1	273949	Lotus japonicus
BA023582.1	AF128443	Glycine max	BA067011.1	D31905	Zea mays
CAA65244.1	X95997	Solanum tuberosum	BA097114.1	U58853	Glycine max
CAA57898.1	X82548	Hordeum vulgare	BA067021.1	D31906	Zea mays
CAAC99329.1	AF062479	Oryza sativa	CAA67153.1	X98540	Fagus sylvatica
CAAO7813.1	AJ007990	Hordeum vulgare	BA002110.1	D12542	Pisum sativum
CAA46554.1	X65604	Hordeum vulgare	CAA41966.1	X59276	Oryza sativa
AA065457.1	U55768	Oryza sativa	BA002109.1	D12541	Pisum sativum
CAA46556.1	X65606	Hordeum vulgare	BA084640.1	AB007911	Pisum sativum
AA058348.1	U29095	Triticum aestivum	CAA98185.1	273957	Lotus japonicus
CAA06503.1	AJ005373	Cratogeomys plantaginum	CAA98186.1	273958	Lotus japonicus
AA096325.1	M94726	Triticum aestivum	CAA98182.1	273954	Lotus japonicus
CA081443.1	Z26846	Mesembryanthemum cryetallinum	AA048018.1	AF165095	Gossypium hirsutum
AA000239.1	U73938	Nicotiana tabacum	CAA98183.1	273955	Lotus japonicus
BA013608.1	D88399	Oryza sativa	AA048019.1	AF165096	Gossypium hirsutum
AA068962.1	L38855	Glycine max	CAA54506.1	X77301	Glycine max
AA060195.1	AC084763	Oryza sativa	CAA98178.1	273950	Lotus japonicus
BA010573.1	BE002109	Oryza sativa	BA002108.1	D12540	Pisum sativum
CA082026.1	Z49233	Chlamydomonas eugametos	AA034255.1	L08130	Volvox carterii
AA002406.1	U73939	Nicotiana tabacum	CAA98186.1	273937	Lotus japonicus
AA027340.1	AF186020	Vicia faba	AA090955.1	U32185	Glycine max
AA095059.1	AF100162	Chlamydomonas reinhardtii	AA063902.1	U22433	Zea mays
SEQ ID NO. 73			SEQ ID NO. 75		
CAA90282.1	Z49990	Solanum tuberosum	CAA52069.1	X73849	Brassica napus
SEQ ID NO. 74			CAA52070.1	X73850	Brassica napus
AA015703.1	AF327517	Oryza sativa	CAA61111.1	X87842	Brassica rapa
BA002904.1	D13758	Oryza sativa	AA049002.1	U17098	Carthamus tinctorius
BA002113.1	D12545	Pisum sativum	AA033020.1	M96569	Carthamus tinctorius
BA002114.1	D12546	Pisum sativum	AA051523.1	U92876	Garcinia mangostana
CAA98180.1	273952	Lotus japonicus	AA035064.1	AF318288	Capsicum chinense
BA002112.1	D12544	Pisum sativum	AA033019.1	M96568	Carthamus tinctorius
CAA98181.1	273953	Lotus japonicus	AA051524.1	U92877	Garcinia mangostana
CAA98184.1	273956	Lotus japonicus	AA063859.1	AF213478	Iris germanica
			AA028187.1	AF110462	Elaeis guineensis

[illegible]

DAG43545..	AF211527	Nicotiana tabacum
RHA07321..	D38123	Nicotiana tabacum
CAB96900..	AJ231450	Catharanthus roseus
CAB96999..	AJ251249	Catharanthus roseus
RHB03248..	AJ201783	Oryza sativa
BAB116083..	AF136883	Oryza sativa
RAT23899..	AF139303	Oryza sativa
RAF7698..	AF174033	Oryza sativa
CAG62619..	AF057373	Nicotiana glauca
EAA78738..	AF023482	Oryza sativa
RAG43548..	AF211530	Nicotiana tabacum
AAG43549..	AF211531	Nicotiana tabacum
EBA99376..	AF002526	Oryza sativa
RAA039439..	AF132001	Petunia x hybrida
<hr/>		
SQ ID NO. 89		
CHA04385..	RA000885	Brassica napus
CAB46492..	AU243340	Lycopersicon esculentum
RAF62182..	AF247164	Oryza sativa
RAF3210..	AF230277	Triphysaria versicolor
CAG30088..	AU212123	Lycopersicon esculentum
CAA06271..	AU204997	Lycopersicon esculentum
RAI13632..	AF059488	Lycopersicon esculentum
RAGL3982..	AF297521	Prunus avium
CAG33529..	U93167	Prunus americana
PAB19676..	AF029083	Prunus persica
RAH37746..	U30382	Cucumis sativus
RAF35901..	AF230332	Zinnia elegans
CAC33530..	AF038815	Prunus americana
CAC19184..	AF029187	Cicer arietinum
RAGL3983..	AF297522	Prunus avium
CAG39512..	AF043284	Gossypium hirsutum
RAF21101..	AF159563	Fragaria x ananassa
RAF35900..	AF230331	Zinnia elegans
CAG96081..	AF249354	Nicotiana tabacum
RAA40634..	U64890	Pinus taeda
RAA40635..	U64891	Pinus taeda
RAA47901..	AF085330	Pinus taeda
RAF32409..	AF230276	Triphysaria versicolor
RAA40637..	U64893	Pinus taeda
RAA81662..	U85246	Oryza sativa
<hr/>		
SQ ID NO. 90		
CAC12822..	AU299252	Nicotiana tabacum
CAC4587..	AF071893	Prunus americana
RAF23899..	AF193803	Oryza sativa
RAF76898..	AF274033	Atroplex hortensis
RAF63205..	AF245119	Mesembryanthemum crystallinum
ENB16083..	AJ036683	Oryza sativa
CAB96900..	AJ231250	Catharanthus roseus
CAB96899..	AJ251249	Catharanthus roseus
BAH78738..	AF023482	Oryza sativa
RAA99376..	AF002526	Oryza sativa
CAG32659..	AF253971	Picea abies
<hr/>		
SQ ID NO. 91		
AAGL3983..	AF297522	Prunus avium
CAG36080..	AF049353	Nicotiana tabacum

[illegible]

RA021086.1	AF127218	Forsythia x intermedia	CNA65533.1	X96758	Zea mays
RA081683.1	AF000372	Vitis vinifera	SEQ ID NO. 101		
RA041017.1	AB047090	Vitis labrusca x Vitis vinifera	BA083215.1	AF000570	Oryza sativa
RA041020.1	AB047093	Vitis vinifera	AA080586.1	U19490	Chlamydomonas reinhardtii
RA041026.1	AB047099	Vitis vinifera	AA080216.1	U19484	Chlamydomonas reinhardtii
RA041028.1	AB047097	Vitis vinifera			
RA041022.1	AB047095	Vitis vinifera	SEQ ID NO. 102		
RA081682.1	AF000371	Vitis vinifera	AA070452.1	U65890	Brassica napus
RA041018.1	AB047091	Vitis labrusca x Vitis vinifera	AA063591.1	AF009413	Oryza sativa
AA017077.1	AF139453	Sorghum bicolor	AA059307.1	K87646	Spinacia oleracea
CNA54611.1	X77461	Manihot esculenta	AA060293.1	AF233745	Lycopersicon esculentum
RA089009.1	AB027455	Petunia x hybrida			
RA033039.1	AB033758	Citrus unshiu	SEQ ID NO. 103		
CNA54609.1	X77459	Manihot esculenta	AA025928.1	AF260919	Petunia x hybrida
RA089008.1	AB027454	Petunia x hybrida	AA025927.1	AF260918	Petunia x hybrida
RA019659.1	AB002818	Perilla frutescens	AA028907.1	U18349	Phaseolus vulgaris
CNA54614.1	X77464	Manihot esculenta	AA006686.1	U18348	Phaseolus vulgaris
			CNA92300.1	AJ251719	Zea mays
SEQ ID NO. 99			RA015818.1	U396107	Zea mays
RA020962.1	AB029512	Solanum tuberosum	RA049219.1	U39660	Oryza sativa
RA025636.1	AF044173	Solanum tuberosum	RA049216.1	U39865	Oryza officinalis
RA030344.1	D14722	Spinacia oleracea	RA039455.1	AF020345	Petunia x hybrida
RA047329.1	X66860	Spinacia oleracea	AA043412.1	U39863	Oryza australiensis
RA020863.1	AB029313	Solanum tuberosum	AA049213.1	U39864	Oryza eichingeri
RA023909.1	AF073697	Oryza sativa	AA056411.1	AF185269	Tulipa gesneriana
RA03965.1	D28777	Citrus sativa			
RA050661.1	AB029511	Citrus sativa	SEQ ID NO. 104		
RA050661.1	AB029511	Solanum tuberosum	AA033041.1	M33148	Citrus lanatus
RA059798.1	X85803	Zea mays	AA041647.1	U31900	Cucumis sativus
RA093051.1	AB040503	Allium tuberosum	AA099754.1	AF020270	Medicago sativa
RA023907.1	AF073695	Oryza sativa	BA012870.1	D85763	Oryza sativa
RA025635.1	AF044172	Solanum tuberosum	CNA43995.1	AJ242713	Brassica napus
CAC12819.1	AJ299249	Nicotiana tabacum	CNA43994.1	AJ242712	Brassica napus
CA009469.1	AL442113	Oryza sativa	CNA63268.1	X92512	Brassica napus
RA071777.1	D37963	Spinacia oleracea	CNA55383.1	X78800	Eucalyptus gunnii
CA006024.1	AJ006024	Cicer arietinum	RA056659.1	AF180335	Glycine max
RA023908.1	AF073696	Oryza sativa	RA069802.1	AF195869	Vitis vinifera
RA023910.1	AF073698	Oryza sativa	RA099755.1	AF020271	Medicago sativa
RA071829.1	AF195239	Pyrus pyrifolia	RA099757.1	AF020273	Medicago sativa
			RA028106.1	AF079850	Pisum sativum
SEQ ID NO. 100					
RA039510.1	U53345	Camptotheca acuminata			

AAC24855.1	AF068686	Glycine max	AAA81889.1	U02494	Solanum tuberosum
CAAG1621.1	X9451	Brassica napus	AAA81891.1	U02496	Solanum tuberosum
AA848497.1	U40012	Chlamydomonas reinhardtii	AAA81892.1	U02497	Solanum tuberosum
CNB45387.1	U006974	Plastid Nicotiana tabacum	AAA81890.1	U02495	Solanum tuberosum
ADAD10324.1	U42979	Chlamydomonas reinhardtii	BA85201.1	AP00570	Oryza sativa
AAAB39506.1	U04065	Chlamydomonas reinhardtii	BA84626.1	AP000492	Oryza sativa
CN861751.1	AJ275317	Cicer arietinum	AAA81893.1	U02498	Solanum tuberosum
AAC19244.1	AF068687	Glycine max	BA84627.1	AP000492	Oryza sativa
AAC19136.1	AF068688	Glycine max	BA85202.1	AP000570	Oryza sativa
AAC19137.1	AF068689	Glycine max	ANB02006.1	U57350	Nicotiana tabacum
AF27629.1	AJ217211	Medicago truncatula	SEQ ID NO. 111		
AA835861.1	AF220497	Medicago truncatula	ARB17501.2	U43034	Zea mays
BA838970.1	U80676	Borreria cocorus braunii	SEQ ID NO. 112		
AA82697.1	M55684	Hordeum vulgare	CAA71891.1	Y10990	Nicotiana tabacum
BA802971.1	D13817	Oryza sativa	SEQ ID NO. 113		
AA826431.1	AF353203	Oryza sativa	CAA70700.1	Y09506	Nicotiana tabacum
AA813573.1	AC037425	Oryza sativa	CAA707134.1	Y18349	Oryza sativa
AA82696.1	M55685	Hordeum vulgare	CAA717133.1	Y18349	Oryza sativa
AA864290.1	AF007581	Zea mays	SEQ ID NO. 114		
AA81611.1	Y10602	Lycopersicon esculentum	AF20949.1	AF207691	Daucus carota
CAA70100.1	Y08887	Lycopersicon esculentum	AA804950.1	U36752	Chlamydomonas reinhardtii
AF20272	Lycopersicon esculentum	Medicago sativa	CAAC6050.2	S63824	Pinus mugo
AJ299256	CAAC12826.1	Nicotiana tabacum	AF89208.1	AF279251	Vigna radiata
AA821564.1	AF067859	Solanum tuberosum	BA21089.1	D50085	Cucumis sativus
CAA70101.1	Y08888	Oryza sativa	BA311693.1	AB007321	Marchantia paleacea
AA80618.1	AF081129	Lycopersicon esculentum	AB866734.1	AF027356	Pinus strobus
CAA71612.1	Y10603	Lycopersicon esculentum	AF82471.1	AF243520	Lycopersicon esculentum
CAA77806.1	Z11754	Zea mays	AF82475.1	AF243522	Lycopersicon esculentum
AA87008.1	U22533	Flaveria trinervia	AD200020.1	AF126871	Chloroplaet vigna radiata
SEQ ID NO. 105			AF82474.1	AF243524	Lycopersicon esculentum
BA833228.2	AF305070	Chlamydomonas reinhardtii	SEQ ID NO. 116		
BA896166.1	AF002092	Oryza sativa	CAA73171.1	Y12599	Apium graveolens
SEQ ID NO. 106			CAAC29454.1	AF352251	Lens culinaris
CNB85464.1	AJ277212	Avena sativa	CAAC0362.1	X57077	Zea mays
SEQ ID NO. 107			BA825203.1	D87064	Triticum aestivum
BAA09852.1	D63781	Glycine max	AAK29455.1	AF52252	Lens culinaris
CAAC55293.1	X78547	Glycine max			
AA85294.1	X78548	Glycine max			

RAK29450.1	AF352247	Pisum sativum	SEQ ID NO. 120	Pimpinella brachycarpa
RAK29456.1	AE332253	Lens culinaris	ANF22526.1	Lycopersicon esculentum
BAH8671.1	AB029614	Nicotiana tabacum	CAH6760.1	Petunia x hybrida
RAK29453.1	AF352250	Lathyrus sativus	CAH64614.1	Petunia x hybrida
RAK29452.1	AF352249	Pisum sativum	CAH78386.1	Antirrhinum majus
AF352246			CAH43399.1	Petunia x hybrida
BAK29449.1	D87065	Triticum aestivum	CAH78387.1	Nicotiana tabacum
BAK29450.1	AF352248	Pisum sativum	BNH88221.1	Nicotiana tabacum
RAK29451.1	AF352249	Lycopersicon esculentum	BNH88221.1	Nicotiana tabacum
CAH12232.1	AJ224933	Fritillaria agrestis	BAH88224.1	Nicotiana tabacum
ANB66957.1	AF031547	Nicotiana tabacum	BAH41101.1	Nicotiana tabacum
CAH41651.1	L29456	Nicotiana tabacum	BNH88221.1	Nicotiana tabacum
AAH50578.1	U03391	Lycopersicon esculentum	BNH88222.1	Nicotiana tabacum
BAH7331.1	AB012694	Lilium longiflorum	CAH68235.1	Hordeum vulgare
ADA41007.1	AF107024	Triticum aestivum	CAH68235.1	Lycopersicon esculentum
CAE27930.1	AF222804	Euphorbia esula	CNA66952.1	
CAH29123.1	X05636	Pisum sativum	SEQ ID NO. 121	
AAH34246.1	L07947	Volvox carterii	CAH78387.1	Petunia x hybrida
CAH07233.1	AJ006767	Cicer arietinum	BNH81736.1	Glycine max
AAH50303.1	L34578	Pisum sativum	BNH81732.1	Glycine max
ADA41008.1	AF107026	Triticum aestivum	BNH81731.1	Glycine max
AAH74723.1	L07946	Volvox carterii	BNH81730.1	Glycine max
CAH42529.2	X59872	Triticum aestivum	BNH88221.1	Nicotiana tabacum
ADA41005.1	AF107022	Triticum aestivum	BNH88224.1	Nicotiana tabacum
SEQ ID NO. 119			CAH66952.1	Nicotiana tabacum
CAH07568.1	AJ007580	Ribes nigrum	BNH81733.2	Lycopersicon esculentum
CAH67107.1	X98474	Solanum tuberosum	CAH72217.1	Glycine max
BAH32520.1	AF001383	Oryza sativa	BNH88222.1	Oryza sativa
CAH72107.1	Y11220	Solanum tuberosum	BAH41101.1	Nicotiana tabacum
AAH71744.1	U75346	Chlamydomonas reinhardtii	BNH88223.1	Nicotiana tabacum
AAH71743.1	U75345	Chlamydomonas reinhardtii	CAH72185.1	Oryza sativa
BAH31583.1	AB016064	Zea mays	AAH31574.1	Oryza sativa
BAH31582.1	AB016065	Glycine max	AAH31574.1	Gossypium hirsutum
BAH31584.1	AB016065	Oryza sativa	CAH78386.1	Petunia x hybrida
CAH61741.1	AJ275306	Cicer arietinum	CAH72218.1	Oryza sativa
CAH69726.1	Y08499	Betula pendula	CAH72218.1	Hordeum vulgare
CNCJ2820.1	AJ299250	Nicotiana tabacum	AAH33500.1	Zea mays
BAH08105.1	D45075	Panicum miliaceum	CAH67600.1	Lycopersicon esculentum
BAH08104.1	D45074	Panicum miliaceum	AAH36774.1	Zea mays
BAH08103.1	D45073	Panicum miliaceum	ANF22526.1	Pimpinella brachycarpa
CAC27140.1	AJ132535	Picea abies	CAH72187.1	Oryza sativa

CA043399.1	AJ006292	Antirrhinum majus	AAK19618.1	AF336285	Gossypium hirsutum
AAK19615.1	AF336282	Gossypium hirsutum	AAK19611.1	AF336278	Gossypium hirsutum
AAK19616.1	AF336285	Gossypium hirsutum	AAK19619.1	AF336286	Gossypium hirsutum
AAK19618.1	Y11351	Oryza sativa	AAK19615.1	AF336282	Gossypium hirsutum
CA046414.1	X95296	Lycopersicon esculentum	CA046414.1	X95296	Lycopersicon esculentum
CA050221.1	X70876	Hordeum vulgare	BA023338.1	D88618	Oryza sativa
BA023338.1	D88618	Oryza sativa	BA023337.1	D88617	Oryza sativa
AAK19611.1	AF336286	Gossypium hirsutum	AAK19619.1	X99134	Lycopersicon esculentum
AAK19616.1	AF336278	Gossypium hirsutum	CA065525.1	X96749	Oryza sativa
BA023337.1	D88617	Oryza sativa	CA050221.1	X70876	Hordeum vulgare
CA065525.1	X96749	Oryza sativa	AAK19617.1	AF161711	Pimpinella brachycarpa
AAK19617.1	AF336284	Gossypium hirsutum	AAK19617.1	AF336284	Gossypium hirsutum
CA065525.1	X99134	Lycopersicon esculentum	CA050222.1	X70877	Hordeum vulgare
CA050224.1	X70879	Hordeum vulgare	CA050224.1	X70879	Hordeum vulgare
SEQ ID NO. 122			SEQ ID NO. 125		
BA080222.1	AB028650	Nicotiana tabacum	BA092155.1	AB007818	Citrus unshiu
BA080221.1	AB028649	Nicotiana tabacum	BA092179.1	X37152	Nicotiana tabacum
BA080224.1	AB028652	Nicotiana tabacum	BA092179.1	X37152	Nicotiana tabacum
CA076952.1	Z13397	Petunia x hybrida	BA092179.1	AB041513	Nicotiana tabacum
CA069552.1	X99308	Lycopersicon esculentum	SEQ ID NO. 126		
AA041101.1	U72762	Nicotiana tabacum	CA068993.1	Y07721	Petunia x hybrida
BA080223.1	AB028651	Nicotiana tabacum	SEQ ID NO. 134		
BA081733.1	AB029162	Glycine max	AA026960.1	D63726	Glycine max
BA081731.1	AB029160	Glycine max	SEQ ID NO. 135		
BA081730.1	AB029159	Glycine max	CA077403.1	Z00044	Plastid Nicotiana tabacum
BA081736.1	AB029165	Oryza sativa	SEQ ID NO. 136		
BA081732.1	AB029161	Glycine max	AA036543.1	U77935	Phaseolus vulgaris
BA072185.1	Y11350	Oryza sativa	SEQ ID NO. 137		
AA013574.1	AC037425	Oryza sativa	CA077928.1	AF084202	Medicago sativa
CA072218.1	Y11415	Oryza sativa	BA07208.1	D38011	Oryza sativa
CA072218.1	Y11415	Oryza sativa	SEQ ID NO. 138		
CA078386.1	Z13996	Petunia x hybrida	BA077358.1	AB020023	Nicotiana tabacum
CA043399.1	AJ006292	Antirrhinum majus	BA076432.1	AB041520	Nicotiana tabacum
AAK19616.1	AF336283	Gossypium hirsutum	CA049528.1	U56834	Petroselinum crispum
AG06774.1	AF210616	Zea mays	AA027591.1	AT121354	Petroselinum crispum
AA033500.1	W73028	Zea mays			
CA068235.1	X99973	Hordeum vulgare			
CA072187.1	Y11352	Oryza sativa			
CA072186.1	Y11351	Oryza sativa			
CA067800.1	X99210	Lycopersicon esculentum			

AA019392.1	AF069314	Mesembryanthemum crystallinum	AA049230.1	AF159385	Hordeum bulbosum
CAA05086.1	AJ001903	Triticum turgidum subsp. durum	AA049232.1	AF159387	Lolium perenne
BAB20886.1	BA0013294	Oryza sativa	AA049233.1	AF159388	Phalaris coerulea
AA049357.1	U35830	Pisum sativum	AA049234.1	AF159389	Phalaris coerulea
CAA45098.1	X63537	Pisum sativum	BA019524.1	D87984	Pisum sativum
CAA41415.1	X58527	Nicotiana tabacum	AA041415.1	X58527	Nicotiana tabacum
BA004864.1	D21836	Oryza sativa	AA049231.1	AF159386	Secale cereale
BA051522.1	U92541	Oryza sativa	AA056850.1	X80887	Chlamydomonas reinhardtii
BA05546.1	D26547	Oryza sativa	CAA55399.1	X78822	Chlamydomonas reinhardtii
AA04671.1	AF018174	Brassica napus	AA053695.1	U59380	Brassica napus
AA03111.1	AF051206	Picea mariana	AA056954.1	AF186240	Secale cereale
CAA94534.1	Z70677	Ricinus communis	CAA35827.1	X51463	Spinacia oleracea
BA010434	BA010434	Brassica rapa	CAA35826.1	X51462	Spinacia oleracea
BA013524.1	D87984	Eragrostis esculentum	CAA45098.1	X63537	Pisum sativum
BA035777.1	AF273844	Brassica oleracea var.	CAA33082.1	X14959	Spinacia oleracea
alboaglabra			AA049357.1	U35830	Pisum sativum
BA053694.1	U59379	Brassica napus	AA049358.1	AF069314	Mesembryanthemum crystallinum
CAA77847.1	Z11803	Nicotiana tabacum	CAA55685.1	X80888	Chlamydomonas reinhardtii
CAA56850.1	X80887	Chlamydomonas reinhardtii	CAA55398.1	X76269	Pisum sativum
CAA55399.1	X78822	Chlamydomonas reinhardtii	AA049358.1	U35831	Pisum sativum
CAA35827.1	X51463	Spinacia oleracea	AA04671.1	AF018174	Brassica napus
CAA35826.1	X51462	Spinacia oleracea	CAA06736.1	AJ005841	Oryza sativa
AA033596.1	AF133127	Hevea brasiliensis	AA052409.1	U76831	Brassica napus
BA053695.1	U59380	Brassica napus	AA045358.1	AF160870	Brassica napus
SEQ ID NO. 147			SEQ ID NO. 148		
AA033596.1	AF133127	Hevea brasiliensis	AA049358.1	U35831	Pisum sativum
CAA77847.1	Z11803	Nicotiana tabacum	CAA53900.1	X76269	Pisum sativum
BA020886.1	AF053294	Oryza sativa	AA052409.1	U76831	Brassica napus
BA08066.1	AF286593	Triticum aestivum	AA045358.1	AF160870	Brassica napus
CAA05081.1	AJ001903	Triticum turgidum subsp. durum	SEQ ID NO. 149		
CAA94534.1	Z70677	Ricinus communis	CAA88032.1	AJ0271093	Lycopersicon esculentum
BA032111.1	AF051206	Picea mariana	AA057141.1	AF230371	Lycopersicon esculentum
BA025681.1	BA010434	Brassica rapa	AA049353.1	U00428	Linum usitatissimum
AA053777.1	AF273844	Brassica oleracea var.	CAA86383.1	AJ250864	Hordeum vulgare
alboaglabra			CAA86384.1	AJ251304	Hordeum vulgare
BA053694.1	U59379	Brassica napus	AA046041.1	AF223811	Cucumis sativus
BA059913.1	AF002912	Oryza sativa	AA046041.1	AF223811	Cucumis sativus
BA05546.1	D26547	Oryza sativa	BA054846.1	AJ249246	Medicago sativa
BA051522.1	U92541	Oryza sativa	BA054847.1	AJ249246	Medicago sativa
BA004864.1	D21836	Oryza sativa			

CA054849.1 A229247
 AA097465.1 U51674
 RAK27266.1 A028374
 RAK15070.1 AF239670
 RAK27265.1 A028373
 RAK7142.1 AF230372
 CAB43022.1 A0239065

Medicago sativa
 Capsicum annuum
 Peidum guajava
 Lycopersicon esculentum
 Lycopersicon esculentum
 Lycopersicon esculentum

RA001533.1 AF289466
 CA06980.1 X97315
 CA025503.1 A0297916
 CA066235.1 X97639
 CAC117703.1 A0278885
 RAK08721.1 AF038570
 CA065982.1 X97317
 CAC11504.1 A0297917
 CA066236.1 X97640
 BAA19553.1 D64036
 RAA33479.1 D60526
 CAA42922.1 X60374
 CAA54746.1 X77680
 RAA0483.1 U23409
 RAA92823.1 U18365
 CAA71242.1 Y10160
 CAA76700.1 Y17225
 CAA56815.2 X80845
 RAK16652.1 AF194820

Nicotiana tabacum
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum rubrum
 Chenopodium rubrum
 Dunaliella tertiolecta
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum majus
 Zea mays
 Oryza sativa
 Oryza sativa
 Picea abies
 Triticum aestivum
 Brassica napus
 Lycopersicon esculentum
 Chenopodium rubrum
 Pinus contorta
 Populus tremula x Populus

SEQ ID NO. 150
 RAA74901.1 L34343
 RAA74901.1 L34344
 RAK27795.1 AF079168
 BAA82095.1 AB022603
 RAA82094.1 AB022602
 CAA29060.1 A0250008

Ruta graveolens
 Ruta graveolens
 Nicotiana tabacum
 Oryza sativa
 Oryza sativa
 Catharanthus roseus

RA001533.1 AF289466
 CA06980.1 X97315
 CA025503.1 A0297916
 CA066235.1 X97639
 CAC117703.1 A0278885
 RAK08721.1 AF038570
 CA065982.1 X97317
 CAC11504.1 A0297917
 CA066236.1 X97640
 BAA19553.1 D64036
 RAA33479.1 D60526
 CAA42922.1 X60374
 CAA54746.1 X77680
 RAA0483.1 U23409
 RAA92823.1 U18365
 CAA71242.1 Y10160
 CAA76700.1 Y17225
 CAA56815.2 X80845
 RAK16652.1 AF194820

Nicotiana tabacum
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum rubrum
 Chenopodium rubrum
 Dunaliella tertiolecta
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum majus
 Zea mays
 Oryza sativa
 Oryza sativa
 Picea abies
 Triticum aestivum
 Brassica napus
 Lycopersicon esculentum
 Chenopodium rubrum
 Pinus contorta
 Populus tremula x Populus

SEQ ID NO. 151
 RAA92823.1 U18365
 RAK16652.1 AF194820
 tremuloides
 CAA76700.1 Y17225
 CA041680.1 L34206
 CAA76701.1 Y17226
 RAA34241.1 X99497
 CAA99591.1 Z75661
 CAA61581.1 X89400
 RAA33479.1 M60526
 RAA330506.1 AF129886
 RAA30494.1 AF126737
 CAC115503.1 A0297916
 RAK08721.1 AF038570
 CAC115504.1 A0297917
 BAA19553.1 D64036
 CAA76700.1 X53035
 CAA71242.1 X58194
 RAA98556.1 U53510
 BAA18271.1 AB035141
 CAA96384.1 Z711702

Brassica napus
 Populus tremula x Populus
 Lycopersicon esculentum
 Petroselinum crispum
 Lycopersicon esculentum
 Vigna aconitifolia
 Sesbania rostrata
 Vigna unguiculata
 Zea mays
 Vigna radiata
 Phaseolus vulgaris
 Lycopersicon esculentum
 Dunaliella tertiolecta
 Lycopersicon esculentum
 Oryza sativa
 Pismum sativum
 Oryza sativa
 Solanum tuberosum
 Chlamydomonas reinhardtii
 Beta vulgaris

RA001533.1 AF289466
 CA06980.1 X97315
 CA025503.1 A0297916
 CA066235.1 X97639
 CAC117703.1 A0278885
 RAK08721.1 AF038570
 CA065982.1 X97317
 CAC11504.1 A0297917
 CA066236.1 X97640
 BAA19553.1 D64036
 RAA33479.1 D60526
 CAA42922.1 X60374
 CAA54746.1 X77680
 RAA0483.1 U23409
 RAA92823.1 U18365
 CAA71242.1 Y10160
 CAA76700.1 Y17225
 CAA56815.2 X80845
 RAK16652.1 AF194820

Nicotiana tabacum
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum rubrum
 Chenopodium rubrum
 Dunaliella tertiolecta
 Medicago sativa
 Lycopersicon esculentum
 Antirrhinum majus
 Zea mays
 Oryza sativa
 Oryza sativa
 Picea abies
 Triticum aestivum
 Brassica napus
 Lycopersicon esculentum
 Chenopodium rubrum
 Pinus contorta
 Populus tremula x Populus

SEQ ID NO. 152
 RAG01532.1 AF289465

Nicotiana tabacum

RA001532.1 AF289465

Nicotiana tabacum

CLA65979.1	X97314	Medicago sativa	RA000708.1	U91857	Stylosanthes hamata
CLA65981.1	X97316	Medicago sativa	RA024974.1	U89257	Lycopersicon esculentum
RA040580.1	AF216316	Oryza sativa	RA029516.1	U77655	Solanum tuberosum
CB61889.1	AJ251330	Oryza sativa	RA079606.1	AF190770	Oryza sativa
BS118271.1	AB035141	Chlamydomonas reinhardtii	RA076734.1	AF024575	Nicotiana tabacum
			RA041623.1	AF004185	Brassica napus
			RA059619.1	AF243384	Oryza sativa
SEQ ID NO. 154					
RA050047.1	U89255	Lycopersicon esculentum	SEQ ID NO. 156		
RAA97122.1	AB016264	Nicotiana sylvestris	CA05875.1	X83923	Solanum tuberosum
RAA07321.1	D38123	Nicotiana tabacum	CA04994.1	AJ000172	Nicotiana tabacum
RAA06261.1	AF057373	Nicotiana tabacum	CA052708.1	AJ010712	Solanum tuberosum
RAA87068.1	AB035279	Matricaria chamomilla	CA067782.1	X99405	Nicotiana tabacum
CA08689.1	AJ251249	Catharanthus roseus	CA043941.1	AJ000184	Spinacia oleracea
CA096900.1	AJ251250	Catharanthus roseus	RA069317.1	AF012861	Petroselinum crispum
RA038748.1	U81157	Nicotiana tabacum	CA052685.1	AJ132346	Dunaliella bioculata
RAA97140.1	U89256	Lycopersicon esculentum	CA043939.1	AJ000182	Spinacia oleracea
RAA97124.1	AB016266	Nicotiana sylvestris	RAA87216.1	AF231351	Nicotiana tabacum
RAA97123.1	AB016265	Nicotiana sylvestris	CA043940.1	AJ000183	Spinacia oleracea
RAA00708.1	U91857	Stylosanthes hamata	RAA41552.1	U18238	Medicago sativa subsp. sativa
RAA03248.1	AB037183	Oryza sativa	RAA97662.1	AB029454	Trifolium aestivum
RAA05606.1	AF190770	Oryza sativa	RAA11426.1	X74421	Mesembryanthemum crystallinum
RAA76734.1	AB024575	Nicotiana tabacum	CA052442.1	AF012562	Solanum tuberosum
RAA49741.1	U89255	Lycopersicon esculentum	RAA69318.1	AB029455	Petroselinum crispum
RAA29516.1	U77655	Solanum tuberosum	RAA97663.1	AB029455	Trifolium aestivum
RAA45623.1	AF094185	Brassica napus	RAA69319.1	AF012863	Petroselinum crispum
RAA59618.1	AF239616	Hordeum vulgare	RAA97664.1	AB029456	Trifolium aestivum
RAA01089.1	AF298231	Hordeum vulgare	CA049993.1	AJ0001770	Nicotiana tabacum
SEQ ID NO. 155					
RAA97124.1	AB016266	Nicotiana sylvestris	SEQ ID NO. 157		
RAA87068.1	AB035270	Matricaria chamomilla	CA070768.1	Y09579	Pisum sativum
CA050047.1	U89255	Lycopersicon esculentum	CA0494801.1	AJ289774	Pisum sativum
RAA97122.1	AB016264	Nicotiana sylvestris	CA089693.1	AJ276591	Pisum sativum
RAA07321.1	D38123	Nicotiana tabacum	CA089812.1	AF029984	Lycopersicon esculentum
RAA07321.1	U89256	Lycopersicon esculentum	CA089694.1	AJ276592	Pisum sativum
CA06261.1	AF057373	Nicotiana tabacum	CA094600.1	AJ289773	Pisum sativum
RAA38748.1	U81157	Nicotiana tabacum			
CA09689.1	AJ251250	Catharanthus roseus			
RAA97123.1	AB016265	Nicotiana sylvestris			
BA03248.1	AB037183	Oryza sativa			

BA944422.1	AB040053	Oryza sativa subsp. japonica	AA60195.1	AC084763	Oryza sativa
AAG31173.1	AF315714	Ipomoea nil	BA019573.1	AB002109	Oryza sativa
SEQ ID NO. 159			AA002040.1	U73939	Nicotiana tabacum
AA0339355.1	AF007807	Daucus carota	AA068962.1	L38855	Glycine max
CAA05207.1	AF002140	Lycopersicon esculentum	BA013608.1	D88399	Oryza sativa
AA092852.1	AB030726	Nicotiana tabacum	CA081443.1	Z26846	Mesembryanthemum crystallinum
AAC44931.1	AF034419	Pisum sativum	CA006503.1	AV005373	Craterostigma plantagineum
AA015406.1	AF229183	Zea mays	AA027340.1	AF186020	Vicia faba
AAC39356.1	AF007808	Daucus carota	AA058348.1	U29095	Triticum aestivum
AA011516.1	AF243043	Zea mays	AA098509.1	AF100162	Chlamydomonas reinhardtii
			AA06325.1	X94726	Triticum aestivum
SEQ ID NO. 161			SEQ ID NO. 163		
CA086993.1	AJ276591	Pisum sativum	CA094534.1	Z70677	Ricinus communis
CA094801.1	AF289774	Pisum sativum	CA077847.1	Z11803	Nicotiana tabacum
CA094800.1	AJ289773	Pisum sativum	CA041415.1	X58527	Nicotiana tabacum
CA086994.1	AJ276592	Pisum sativum	BA005546.1	D26547	Oryza sativa
			AA051522.1	U92541	Oryza sativa
SEQ ID NO. 162			BA004684.1	Z21836	Oryza sativa
AA023582.1	AF128443	Glycine max	BA020886.1	AB053294	Oryza sativa
CA065244.1	X95997	Solanum tuberosum	BA01324.1	D87984	Oryza sativa
CA046556.1	X65606	Hordeum vulgare	AA053695.1	U59380	Fagopyrum esculentum
AA066639.1	AF143743	Lycopersicon esculentum	AA053211.1	AF051206	Brassica napus
BA005649.1	D26602	Nicotiana tabacum	AA088067.1	AF286593	Picea mariana
AA052224.1	U83797	Solanum tuberosum	CA005081.1	AF001903	Triticum turgidum subsp. durum
AA099329.1	AF062479	Oryza sativa	AA053694.1	U59379	Brassica napus
CA007813.1	AJ007990	Hordeum vulgare	AA035777.1	AF273844	Brassica oleracea var.
CA046554.1	X65604	Hordeum vulgare	albuginabra		
AA05457.1	U55768	Oryza sativa	EA025681.1	AB010434	Brassica rapa
CA057898.1	X82548	Hordeum vulgare	AA049232.1	AF159387	Lolium perenne
CA071142.1	X10036	Cucumis sativus	AA049231.1	AF159386	Secale cereale
CA065243.1	X95996	Solanum tuberosum	AA049234.1	AF159389	Phalaris coarulescens
BA096208.1	Y12465	Oryza sativa	AA049233.1	AF159388	Phalaris coarulescens
CA073069.1	X12464	Sorghum bicolor	AA049230.1	AF159385	Hordeum bulbosum
BA083688.1	AB011968	Sorghum bicolor	BA056913.1	AF186240	Secale cereale
AA022218.1	AF141378	Oryza sativa	CA055399.1	AF002912	Oryza sativa
BA083688.1	AB011967	Oryza sativa	CA056850.1	X00887	Chlamydomonas reinhardtii
BA034675.1	AB011670	Triticum aestivum	AA033596.1	AF133127	Hevea brasiliensis
AA062693.1	AF004947	Oryza sativa	AA019392.1	AF069314	Mesembryanthemum crystallinum
AA000239.1	U73938	Nicotiana tabacum	CA045098.1	X63537	Pisum sativum

AAB40291.1	U42208	Oryza sativa	AAB65608.1	AF012889	Zea mays
AAK14790.1	AY027510	Catharanthus roseus	BAH88537.1	AF035944	Fragaria x ananassa
Pet091769.1	Y10809	Petroselinum crispum	BAH33157.1	AF008187	Pisum sativum
AAK37418.1	134551	Oryza sativa	AAK22219.1	AF141378	Zea mays
CMA66478.1	X97904	Vicia faba	CAH81443.1	Z26846	Mesembryanthemum crystallinum
AAK49556.1	U04295	Oryza sativa	AAK25423.1	AF072908	Nicotiana tabacum
CAH88493.1	U48603	Nicotiana tabacum	AAK46110.1	AF073166	Oryza sativa
AAK25822.1	AF350505	Phaseolus vulgaris	AAH69325.1	Y94726	Triticum aestivum
CAK70216.1	Y09013	Triticum aestivum	AAK30005.1	AY029067	Rosa hybrid cultivar
CAK71795.1	Y10834	Hordeum vulgare	AAH58348.1	U29095	Triticum aestivum
SEQ ID NO. 169			SEQ ID NO. 171		
CAH06925.1	AF006228	Nicotiana tabacum	CAK00658.1	AJ292745	Petroselinum crispum
SEQ ID NO. 170			CAK00657.1	AJ292744	Petroselinum crispum
BAH83689.1	AB011968	Oryza sativa	CAK74023.1	Y13676	Antirrhinum majus
CAH06334.1	AF005077	Lycopersicon esculentum	CAK74022.1	Y13675	Antirrhinum majus
AAK05112.1	AF158091	Mesembryanthemum crystallinum	BAK22204.1	D63951	Nicotiana tabacum
CAH89202.1	Z49233	Chlamydomonas eugametos	AAK55534.1	AF176641	Lycopersicon esculentum
AAK21062.1	AF216527	Dunaliella tertiolecta	AAK25822.1	AF350505	Phaseolus vulgaris
AAK19402.1	AF203480	Lycopersicon esculentum	CAK71687.1	Y10885	Phaseolus acutifolius
CAK73068.1	Y12465	Sorghum bicolor	CAK37418.1	I34551	Glycine max
AAK19403.1	AF203481	Lycopersicon esculentum	BAK36492.1	AB021736	Oryza sativa
AAK31141.1	AF305911	Oryza sativa	BAH11431.1	D78609	Oryza sativa
AAK31142.1	AF305912	Hordeum vulgare	CAH41453.1	X58577	Petroselinum crispum
AAK06970.1	AF162662	Kalanchoe fedtschenkoi	CAK71768.1	Y10809	Petroselinum crispum
AAK06969.1	AF162661	Kalanchoe fedtschenkoi	AAK49556.1	U04295	Oryza sativa
AAK19401.1	AF203479	Glycine max	BAK07289.1	D38111	Triticum aestivum
BAK90814.1	AF001168	Oryza sativa	CAK71795.1	Y10834	Hordeum vulgare
CAK73067.1	Y12464	Sorghum bicolor	CAK70216.1	Y09013	Triticum aestivum
BAK34675.1	AB011670	Triticum aestivum	CAK40101.1	X56781	Triticum aestivum
BAK05457.1	U55768	Oryza sativa	CAH11499.1	AJ223624	Spinacia oleracea
BAH03688.1	AB011967	Oryza sativa	AAK49474.1	U41817	Phaseolus vulgaris
CAK39936.1	X56599	Daucus carota	AAK40291.1	U42208	Oryza sativa
CAK41172.1	X58194	Oryza sativa	BAH02304.1	D12920	Triticum aestivum
BAH65396.1	AF000615	Oryza sativa	SEQ ID NO. 180		
AAK05270.1	AF048691	Oryza sativa	AAH26116.1	AF106954	Brassica napus
AAK17800.1	AF090835	Mesembryanthemum crystallinum	CAH51533.1	AJ237693	Ajuga reptans
CAK50038.1	X70707	Medicago sativa	CAH51534.1	AJ237694	Ajuga reptans
AAK57156.1	X81393	Oryza sativa	AAH55726.1	AF178569	Vitis riparia
BAK96628.1	AF002482	Oryza sativa			

SEQ ID NO. 194	CAA61158.1	X67931	Beta vulgaris	CAA54609.1	X77459	Manihot esculenta
AAA33136.1	LI6983		Daucus carota	CAN59450.1	X85138	Lycopersicon esculentum
SEQ ID NO. 199				AA04166.1	AF101972	Phaseolus lunatus
BAB12433.1	AB025030		Coptis japonica	BAB41017.1	AB047090	Vitis labrusca x Vitis vinifera
AA050621.1	AF191772		Papaver somniferum	BAB43484.1	AB031274	Scutellaria baicalensis
AA039452.1	AF014800		Eschscholzia californica	BAB41020.1	AB047093	Vitis vinifera
AA039453.1	AF014801		Eschscholzia californica	BAB41022.1	AB047095	Vitis vinifera
AAA32913.1	M32885		Persea americana	BAB41019.1	AB047092	Vitis vinifera
AAAL19701.1	L24438		Thlaspi arvense	BAB41026.1	AB047099	Vitis vinifera
AA050648.1	X71657		Solanum melongena	BAB41025.1	AB047098	Vitis vinifera
AA041132.1	AF218296		Pisum sativum	BAB41024.1	AF190634	Nicotiana tabacum
AA048987.1	D83968		Glycine max	BAB41023.1	AB047096	Vitis vinifera
AA056282.1	U09610		Barberris stolonifera	BAB41018.1	AB047094	Vitis vinifera
AA032274.1	AF155332		Petunia x hybrida	BAB41021.1	AB047091	Vitis vinifera
AA017562.1	U72654		Eustoma grandiflorum	AA081683.1	AF000372	Vitis vinifera
BAB49416.1	AB032833		Cleome arbutifolia	AA081682.1	AF000371	Petunia x hybrida
AA04586.1	AF022459		Glycine max	CAN54614.1	AB027455	Manihot esculenta
BAB40324.1	AB037245		Asparagus officinalis	AA021086.1	AF127218	Forsythia x intermedia
BAB40323.1	AB037244		Asparagus officinalis	AA026203.1	AF172627	Malus x domestica
AA03155.1	X70824		Sorghum bicolor	AA08444.1	U82367	Solanum tuberosum
AA039318.1	AF029658		Catharanthus roseus	SEQ ID NO. 201		
AA036503.1	AJ238612		Antirrhinum majus	CAN33932.1	X15901	Plastid Oryza sativa
AA040071.1	AB028151		Nepeta racemosa	SEQ ID NO. 202		
CAA70575.1	Y09423		Nepeta racemosa	AA050774.1	AF161704	Lycopersicon esculentum
CAA70576.1	Y09424		Torenia hybrida	CAN58444.1	X83421	Lycopersicon esculentum
BAB40472.1	AB028152		Glycine max	SEQ ID NO. 203		
BAB13076.1	D86351			AA077928.1	AF084202	Medicago sativa
SEQ ID NO. 200				BAB407208.1	D38011	Oryza sativa
CAA54612.1	X77462		Manihot esculenta	SEQ ID NO. 204		
CAA54611.1	X77461		Manihot esculenta	AA04624.1	AF098672	Brassica oleracea
CAN56231.1	Y18871		Dortheanthus bellidifloris	BAB24697.1	AB003378	Salix babko
AA036502.1	U32643		Nicotiana tabacum	AA08615.1	AF03494	Zea mays
AA028304.1	AF346432		Nicotiana tabacum	AA057556.1	AF094774	Oryza sativa
CAA54613.1	X77463		Manihot esculenta	AA061599.1	AF091857	Pimpinella brachycarpa
AA028030.1	AF346431		Nicotiana tabacum			
AA036503.1	U32644		Nicotiana tabacum			

222

CA857893.1	X82543	Parthenium argentatum	CA887075.1	Z46951	Glycine max
CA849432.1	U56576	Artemisia annua	CA887076.1	Z46952	Glycine max
AAU17204.1	AF112881	Artemisia annua	CA847870.1	X67601	Lycopersicon peruvianum
BA119556.1	D85317	Oryza sativa	AA874563.1	AF208544	Lycopersicon peruvianum
BA336276.1	AB021747	Oryza sativa	AA875759.1	AF235958	Medicago sativa
AA336248.1	AF136602	Artemisia annua	CA887079.1	Z46955	Glycine max
BA336347.1	AB021379	Oryza sativa	CA8409301.1	AF010644	Pisum sativum
CA337789.1	AF149257	Artemisia annua	CA8409300.1	AF010643	Pisum sativum
AAU45122.1	AF164026	Xanthoceras sorbifolium			
AA833951.1	U97330	Nicotiana tabacum	SEQ ID NO. 236		
AA833984.1	AF005201	Parthenium argentatum	AA872109.1	AF022217	Brassica rapa
			AA849336.1	AF166277	Nicotiana tabacum
SEQ ID NO. 233			CA837847.1	X53851	Daucus carota
CA859893.1	AJ238697	Hordeum vulgare	CA8408908.1	AJ009880	Castanea sativa
BA822194.1	D63425	Spinacia oleracea	CA836910.1	AJ000691	Quercus suber
CA859895.1	AJ238745	Hordeum vulgare	CA841547.1	X58711	Medicago sativa
CA896145.1	AJ250951	Mesembryanthemum crystallinum	CA839360.1	U63631	Fragaria x ananassa
CA842740.1	X60219	Nicotiana glauca	AA803893.1	M11318	Glycine max
BA817430.1	AB041518	Nicotiana tabacum	AA833975.1	M11395	Glycine max
AA848982.1	AF037051	Gossypium hirsutum	CA825578.1	X01104	Glycine max
CA875054.1	Y14762	Lycopersicon esculentum	CA837848.1	X53852	Daucus carota
AA878466.1	AF053311	Zantedeschia aethiopica	BA833062.1	AB017273	Cuscuta japonica
CA875009.1	Y14707	Helianthus annuus	CA853634.2	AJ237596	Helianthus annuus
CA874775.1	Y14429	Helianthus annuus	AA861632.1	U08601	Papaver somniferum
CA8404142.1	AJ000508	Pisum sativum	AA833672.1	M33899	Pisum sativum
CA859894.1	AJ238744	Hordeum vulgare	AA863311.1	U46545	Helianthus annuus
CA875055.1	Y14763	Lycopersicon esculentum	CA840844.1	Z95153	Helianthus annuus
BA833594.1	AB009083	Chlamydomonas sp. W80	CA842222.1	X59701	Helianthus annuus
AA866330.1	AF014927	Chlamydomonas reinhardtii	AA863310.1	U46544	Helianthus annuus
CA8409194.1	AF010455	Triticum aestivum	AA830454.1	AF123257	Lycopersicon esculentum
CA866331.1	AJ279689	Betula pendula	AA830452.1	AF123255	Lycopersicon esculentum
			AA878392.1	U83669	Oryza sativa
SEQ ID NO. 234			CA839603.1	X56138	Lycopersicon esculentum
BA83710.1	AB014483	Nicotiana tabacum	BA8402160.1	D12635	Oryza sativa
CA839034.1	X55347	Lycopersicon peruvianum	AA833903.1	M11317	Glycine max
CA887077.1	Z46953	Glycine max	CA833974.1	X94193	Pennisetum glaucum
CA887080.1	Z46956	Glycine max	AA830453.1	AF123256	Lycopersicon esculentum
CA847869.1	X67600	Lycopersicon peruvianum	AA878394.1	U83671	Oryza sativa
CA847868.1	X67599	Lycopersicon esculentum	CA833910.1	M80939	Oryza sativa
BA833911.1	AB014484	Nicotiana tabacum	AA878393.1	U83670	Oryza sativa
CA858117.1	X82943	Zea mays	CA863370.1	X32983	Pseudotsuga menziesii

RA050278.1	AF169830	Glycine max	RA056770.1	AF242312	Euphorbia esula
SEQ ID NO. 242			RA022973.1	AF126551	Solanum tuberosum subsp.
CAA032142.1	AF123504	Nicotiana tabacum	tuberosum		
CAA48297.1	X68215	Pisum sativum	CAAG03106.1	AC073405	Oryza sativa
CAA48298.1	X68216	Pisum sativum	CA48638.1	X68678	Zea mays
RA032143.1	AF123505	Nicotiana tabacum	SEQ ID NO. 262		
RA032146.1	AF123508	Nicotiana tabacum	RA065777.1	U97522	Vitis vinifera
RAA333945.1	J03919	Glycine max	RA065776.1	U97521	Vitis vinifera
RAA85821.1	AF026822	Cucumis sativus	CA053609.1	AF280437	Secale cereale
RAA33944.1	J03920	Glycine max	CA053626.1	X76041	Triticum aestivum
CAA48300.1	X68218	Pisum sativum	BA003750.1	D16222	Oryza sativa
CAA48299.1	X68217	Pisum sativum	BA001591.1	Z78202	Persea americana
RAA33253.1	AF022013	Lycopersicon esculentum	CA030142.1	X07130	Solanum tuberosum
RA050278.1	AF169830	Glycine max	BA003751.1	D16223	Oryza sativa
BA055840.1	AF002070	Oryza sativa	SEQ ID NO. 263		
SEQ ID NO. 244			RA010836.1	U52079	Solanum tuberosum
RA040976.1	AF03940	Glycine max	BA083352.1	AP000391	Oryza sativa
RA049374.1	U43838	Glycine max	BA090508.1	AF001111	Oryza sativa
CA024490.1	A0303033	Pisum sativum	BA090507.1	AF001111	Oryza sativa
RA049375.1	U43839	Glycine max	BA094511.1	AB041505	Populus nigra
SEQ ID NO. 249			SEQ ID NO. 265		
CAA48630.1	X68664	Solanum tuberosum	CA035496.1	AF052690	Raphanus sativus
RA029840.1	AF037843	Chlamydomonas reinhardtii	CA099310.1	AF052585	Malus x domestica
RA029839.1	AF037842	Chlamydomonas reinhardtii	CA099309.1	AF052584	Malus x domestica
SEQ ID NO. 251			CA027547.1	AF269128	Brassica nigra
CA008041.1	AF053564	Mesembryanthemum crystallinum	CA027696.1	AF016011	Brassica napus
RA014454.1	AF283706	Tulipa gesneriana	CA027694.1	AF016009	Brassica napus
RA014455.1	AF283707	Tulipa gesneriana	CA027695.1	AF016010	Brassica napus
RA014456.1	AF283708	Tulipa gesneriana	CA027546.1	AF269126	Brassica nigra
SEQ ID NO. 257			CA024863.1	AF000700	Ipomoea nil
BA002720.1	D13502	Glycine max	CA022518.1	AF001136	Pinus radiata
SEQ ID NO. 259			BA033205.1	AB001887	Oryza sativa
BA04791.1	AF000559	Oryza sativa	BA033201.1	AB001883	Oryza sativa
CA010766.1	AF132763	Pseudotsuga menziesii	BA033203.1	AB001885	Oryza sativa
RA050539.1	AF052206	Chlamydomonas reinhardtii	BA033206.1	AB001888	Oryza sativa
			BA033202.1	AB001884	Oryza sativa
			BA033204.1	AB001886	Oryza sativa
			BA033200.1	AB001882	Oryza sativa

[illegible]

AAK19620.1	AF336287	Gossypium hirsutum	AAE29483.1	S68879	Brassica napus
BAF76895.1	AB022686	Lycopersicon esculentum	AAE29484.1	S68727	Brassica napus
AAK18914.1	U94748	Petunia x hybrida	SEQ ID NO. 310		
BAF76896.1	AB022687	Lycopersicon esculentum	AAK49484.1	U40402	Hevea brasiliensis
SEQ ID NO. 299			CAA11219.1	AU223281	Manihot esculenta
AAK70241.1	AF016845	Lycopersicon esculentum	CAA822334.1	ZZ9091	Manihot esculenta
AAK52219.1	Y18519	Silene latifolia	SEQ ID NO. 313		
CAA52218.1	Y18517	Silene latifolia	AAK80575.1	U13148	Pennisetum ciliare
AAK97517.1	AF250047	Zea mays	AAK34174.1	AF195243	Chlamydomonas reinhardtii
AAK97518.1	AF250048	Zea mays	SEQ ID NO. 314		
AAK19620.1	AF336287	Gossypium hirsutum	AAA34085.1	M93436	Nicotiana tabacum
AAK97519.1	AF250049	Zea mays	AAA34054.1	M96432	Nicotiana tabacum
AAK18914.1	U94748	Petunia x hybrida	BAB41080.1	AB052729	Pisum sativum
BAF76895.1	AB022686	Lycopersicon esculentum	SEQ ID NO. 315		
AAK7386.1	AF134835	Medicago truncatula	CAA67291.1	X98739	Pisum sativum
AAK63030.1	U83921	Daucus carota	CAA67290.1	X98738	Pisum sativum
SEQ ID NO. 300			CAA10643.1	AJ1132349	Antirrhinum majus
AAK97517.1	AF250047	Zea mays	SEQ ID NO. 316		
CAA52219.1	Y18519	Silene latifolia	AAK97566.1	AF039531	Oryza sativa
CAA52218.1	Y18517	Silene latifolia	SEQ ID NO. 317		
AAK97518.1	AF250048	Zea mays	AAK15222.1	AF32134	Chloroplast Medicago sativa
AAK97519.1	AF250049	Zea mays	BAK33755.2	AF017480	Nicotiana tabacum
AAK70241.1	AF016845	Lycopersicon esculentum	AAK17230.1	AF117339	Nicotiana tabacum
BAF76895.1	AB022686	Lycopersicon esculentum	CAA09935.1	AF012165	Capsicum annuum
AAK27919.1	AF220203	Malus x domestica	BAK57906.1	AB001684	Chlorella vulgaris
BAF76896.1	AB022687	Lycopersicon esculentum	CAA06853.1	AB006095	Cicer arietinum
SEQ ID NO. 305			SEQ ID NO. 318		
AAK94599.1	AF024652	Glycine max	AAAF01467.1	AF190450	Avicennia marina
AAK94598.1	AF024651	Glycine max	SEQ ID NO. 319		
SEQ ID NO. 308			AAK61839.1	AF025430	Papaver somniferum
CAA54255.1	X76932	Spinacia oleracea	AAK39358.1	AF005655	Eschscholzia californica
CAA58020.1	X82776	Pisum sativum	AAK20352.1	S65550	Eschscholzia californica
SEQ ID NO. 309			AAK17487.1	AF049347	Berberis stolonifera
AAK29482.1	S68726	Brassica napus			
AAK60068.1	U14665	Brassica napus			
AAK52230.1	U16751	Brassica oleracea			

CMA6235.1	X99973	Hordeum vulgare	BA01855.1	DL1082	Oryza sativa
SEQ ID NO. 334			BA01584.1	DL0752	Oryza sativa
AA02355.1	AF115574	Pisum sativum	AA02884.1	AF136268	Oryza sativa subsp. japonica
RA01869.1	U11716	Pisum sativum	Y12320		Triticum aestivum
AAA33662.1	M18250	Pisum sativum	AA02762.1	AF286317	Triticum aestivum
			AA02735.1	U17897	Zea mays
SEQ ID NO. 337			BA01854.1	DL1081	Zea mays
CMA56319.1	X80009	Pisum sativum	AA03647.1	AF072724	Zea mays
CA04743.1	AJ011885	Solanum tuberosum	AA061925.1	AF002020	Triticum aestivum
CA04745.1	AJ011888	Solanum tuberosum	CA040749.1	AJ011891	Solanum tuberosum
BA022348.1	P0029548	Phaseolus vulgaris	CA040745.1	AJ011887	Solanum tuberosum
CA04748.1	AJ011890	Solanum tuberosum	CA040744.1	AJ011886	Solanum tuberosum
CA030186.1	AF076679	Triticum aestivum	BA085762.1	P0028067	Nicotiana tabacum
BA01616.1	DL0838	Oryza sativa	BA042940		Ipomoea batatas
RA067316.1	U65948	Zea mays	CA049371.1	X69713	Manihot esculenta
CA04747.1	AJ011889	Solanum tuberosum	C3A49370.1	X69712	Manihot esculenta
BA082828.1	AD023498	Oryza sativa	AA072336.1	AF064563	Hordeum vulgare
CA03946.1	AJ000004	Solanum tuberosum	SEQ ID NO. 339		
CA072154.1	Y11282	Triticum aestivum	CA096173.1	AJ0271719	Spinacia oleracea
AA027623.1	AF286319	Triticum aestivum	AA021277.1	U09194	Mesembryanthemum crystallinum
BA037338.1	DL6201	Oryza sativa	AA034986.1	S79242	Mesembryanthemum crystallinum
AA030187.1	AF076680	Aegilops tauschii	CA041115.1	X58108	Lycopersicon esculentum
CA059754.1	AF064561	Hordeum vulgare	CA075428.1	AJ0271785	Lupinus luteus
AA026822.1	AF338432	Triticum aestivum	CA082233.1	Z28386	Ricinus communis
CA056320.1	X80010	Pisum sativum	CA0C00532.1	AJ132581	Hevea brasiliensis
AA033764.1	AF072725	Zea mays	CA0C00532.1	AJ132580	Hevea brasiliensis
AA018571.1	L08065	Zea mays	CA049173.1	U09450	Oryza sativa
BA017086.1	U66376	Triticum aestivum	AD04187.1	U17973	Zea mays
AA026821.1	AF338431	Aegilops tauschii	CA039454.1	X55981	Zea mays
CA069753.1	AF064560	Hordeum vulgare	CA047043.1	X66412	Chlamydomonas reinhardtii
BA040334.1	AF04560	Ipomoea batatas	CA041116.1	X58109	Lycopersicon esculentum
CA054308.1	X77012	Manihot esculenta	CA05826.2	S79816	Echinocloa phyllipogon
CA070038.1	X08786	Solanum tuberosum	BA004612.1	DL7767	Oryza sativa
BA022349.1	AF002849	Phaseolus vulgaris	CA034559.1	AF082596	Leavenworthia crassa
CA049463.1	X69805	Solanum tuberosum	AA034558.1	AF082595	Leavenworthia stylosa
CA049381.1	AJ0237897	Triticum aestivum	AA034558.1	AF082594	Leavenworthia uniflora
CA040379.1	AJ0237897	Triticum aestivum	AA034558.1	AF082592	Leavenworthia stylosa
CA040980.1	AJ0237897	Triticum aestivum	AA034554.1	AF082591	Leavenworthia crassa
AA027622.1	AF286318	Triticum aestivum	AA046409.1	AF096253	Lycopersicon esculentum
AA050279.2	AF169833	Sorghum bicolor	AA034556.1	AF082593	Leavenworthia uniflora

BAB03447.1	AF002817	Oryza sativa	CAW73134.1	Y12531	Brassica oleracea
BAB92400.1	AP001366	Oryza sativa	RAA33000.1	N76647	Brassica oleracea
BAB84603.1	AP000559	Oryza sativa	RAA93834.1	U92481	Zea mays
CAG63102.2	X32205	Petunia x hybrida	CBA99379.1	AJ245479	Brassica napus subsp. napus
CAG63101.1	X32204	Petunia x hybrida	RAA92836.1	AB032473	Brassica oleracea
SEQ ID NO. 348			CAW79355.1	Z18921	Brassica oleracea
CBA61745.1	AJ275311	Cicer arietinum	RAA33008.1	N97667	Brassica napus
SEQ ID NO. 350			RAA62232.1	U00443	Brassica napus
BAR05539.1	D26538	Oryza sativa	RAA06285.1	D30049	Brassica rapa
ANB66889.1	AF010584	Oryza sativa	RAA21132.1	D81193	Brassica rapa
BAA74736.1	AB016809	Citrus unshiu	RAA23342.1	U20948	Ipomoea trifida
SEQ ID NO. 354			RAA92837.1	AB032474	Brassica oleracea
RAA71743.1	U75345	Chlamydomonas reinhardtii	RAA07576.1	D38563	Brassica rapa
RAA71744.1	U75346	Chlamydomonas reinhardtii	RAA07577.2	D38564	Brassica rapa
RAA92520.1	AF001383	Oryza sativa	RAA23676.1	AB000870	Brassica rapa
RAA07568.1	AJ007580	Ribes nigrum	CAW74662.1	Y14286	Brassica oleracea
CAC27140.1	AJ132535	Picea abies	BAE21001.1	AB054061	Brassica rapa
CAB56325.1	X80023	Triticum turgidum	CAW73133.1	Y12530	Brassica oleracea
CAC12820.1	AJ299250	Nicotiana tabacum	CAB71345.1	X98520	Brassica oleracea
SEQ ID NO. 360			CAB41878.1	Y18259	Brassica oleracea
CAW2681.1	Y11931	Nicotiana rustica	CAB74661.1	Y14285	Brassica oleracea
CAG3777.1	X35564	Solanum tuberosum	CBA41879.1	Y18260	Brassica oleracea
AAW74441.1	U25027	Glycine max	RAA52097.1	AF088885	Nicotiana tabacum
RAA26119.1	AF108123	Brassica napus	AAK21365.1	AJ028699	Brassica napus
SEQ ID NO. 361			AAH33915.1	L27821	Oryza sativa
APAC33765.1	AF072849	Oryza sativa subsp. indica	CAB51836.1	AJ243961	Oryza sativa
SEQ ID NO. 362			RAA92954.1	AF001551	Oryza sativa
AAEF34800.1	AF227980	Euphorbia esula	RAA82556.1	AB030083	Populus nigra
SEQ ID NO. 363			SEQ ID NO. 368		Oryza sativa
RAA22813.1	D26015	Nicotiana tabacum	BAE16860.1	AF002537	Oryza sativa
RAE21205.1	AP002913	Oryza sativa	SEQ ID NO. 373		Avena sativa
SEQ ID NO. 366			CAB06081.1	Z3832	Avena sativa
RAE21872.1	AF078082	Phaseolus vulgaris	SEQ ID NO. 374		Oryza sativa
			BAE32917.1	AF003047	Oryza sativa
			CAB56058.1	AJ133787	Oryza sativa
			SEQ ID NO. 375		Zea mays
			BAE67721.1	AF015269	Zea mays

CA370355.1	Z19921	Brassica oleracea	RAF23534.1	AF110436	Arabis drummondii
BA92837.1	AE032474	Brassica oleracea	RAF34295.1	AF050457	Zea mays
AF088895	AF088895	Nicotiana tabacum	BA07911.1	D6449	Lactuca sativa
BA07577.1	D38563	Brassica rapa	RAF27681.1	X04049	Zea mays
BA054061	D38564	Brassica rapa	RAF23543.1	AF110445	Arabis hirsuta
BA94516.1	AF001800	Brassica rapa	RAF23537.1	AF110439	Arabis glabra
BA94517.1	AF001800	Oryza sativa	CA32934.1	X14926	Trifolium repens
CA333915.1	L27821	Oryza sativa	RAF23529.1	AF110431	Arabis blepharophylla
BA94529.2	AF021800	Oryza sativa	RAF23535.1	AF110437	Arabis drummondii
RAF21365.1	AF028699	Brassica napus	CA34547.1	X16547	Pennisetum glaucum
AA616628.1	AY007545	Brassica napus	RAF23526.1	AF110443	Arabis hirsuta
			RAF23551.1	AF110448	Arabis alpina
			petraea	AF110453	Arabidopsis lyrata subsp.
SEQ ID NO. 414					
CA57446.1	X81853	Nicotiana tabacum	D63454		Arabis gemmifera
CA38309.1	X54106	Petunia x hybrida	D63457		Arabis gemmifera
RAF33807.1	M25153	Solanum tuberosum	RAF01382.1	AF194174	Vitis vinifera
CA33806.1	M25154	Solanum tuberosum	CA80691.1		Phaseolus acutifolius
RAF23527.1	AF110429	Arabis alpina	RAF49546.1	D48373	Pinus banksiana
CA373733.1	X53242	Solanum tuberosum	RAF49540.1	D48367	Pinus banksiana
CA33808.1	M25152	Solanum tuberosum	RAF4335.1	AF195866	Vitis vinifera
CA54450.1	X77233	Lycopersicon esculentum	CA898271.1		Malus x domestica
AA634133.1	M667241	Lycopersicon esculentum			
AA601381.1	AF110426	Vitis vinifera	SEQ ID NO. 416		
RAF23524.1	AF110438	Arabis alpina	CA32375.1	X14172	Oryza sativa
AA65940.1	X36586	Arabis fendleri	CA65510.1	X96738	Pinus sylvestris
RAF23546.1	AF110448	Vitis vinifera	CA427000.1	X03243	Avena sativa
RAF23548.1	AF110450	Arabis lyallii	CA47284.1	X66784	Nicotiana tabacum
RAF23414.1	AF172282	Arabis parshii	CA53165.1	X75412	Petroselinum crispum
RAF23545.1	AF110425	Oryza sativa	CA26599.1	X03242	Avena sativa
RAF23523.1	AF110425	Aubrieta deltoidea	AA61434.1	AF069305	Pisum sativum
RAF23532.1	AF110434	Brassica oleracea	AA61434.1	M18822	Avena sativa
AA33434.1	N32984	Zea mays	RAF6920.1	X32444	Lycopersicon esculentum
RAF23525.1	AF110427	Arabis alpina	RAF80339.1	U60264	Picea abies
RAF23555.1	AF110457	Arabis turcica	CA64796.1	X95550	Mougeotia scalaris
RAF23549.1	AF110451	Arabis pauciflora	CA49128.1	X31284	Mesotanium caldariorum
RAF23539.1	AF110441	Hallimolobos perplexa var.	BA33775.1	AB016231	Adiantum capillus-veneris
lambiosis			BA33775.1	AB016232	Oryza sativa
CA27682.1	X04050	Zea mays	BA374448.1	AB018442	Oryza sativa
RAF43977.1	AF123535	Zea mays	RAF66603.1	AF141942	Oryza sativa
			AB411399.1	U56731	Sorghum bicolor

CAA59800.1	X85805	Zea mays	AA20330.1	AF110266	Oryza sativa
AA60276.1	U09989	Zea mays	CAB85496.1	AJ132894	Medicago truncatula
AA46118.1	AA156691	Nicotiana plumbaginifolia	CAB28223.1	AJ286748	Sesbania rostrata
BA081034.1	D45189	Zostera marina	CA28222.1	AJ286747	Sesbania rostrata
BA01058.1	D10207	Oryza sativa	CAB85497.1	AJ132893	Medicago truncatula
BA17186.1	U72148	Lycopersicon esculentum	AA84204.1	AF029258	Kosteletzkyia virginica
CA54045.1	X76535	Solanum tuberosum	CAC28220.1	AJ286745	Sesbania rostrata
CAB47275.1	X66737	Nicotiana plumbaginifolia	SEQ ID NO. 434		
CA86202.2	AF029256	Kosteletzkyia virginica	AA13731.1	AF002248	Pinus sativum
CAB69823.1	AJ271438	Prunus persica	CA78532.1	Z17226	Pinus sylvestris
BA37150.1	AD022442	Vicia faba	CA78901.1	Z16409	Pinus sylvestris
CAB59799.1	X85804	Phaseolus vulgaris	CA78777.1	X82497	Nicotiana tabacum
CAC29436.1	AJ310524	Vicia faba	RAF90200.1	AF287216	Hordeum vulgare
BA41896.1	U94091	Mesembryanthemum crystallinum	CA67557.1	AF094775	Oryza sativa
BA35314.2	S79323	Vicia faba	CAB32197.1	X14036	Lycopersicon esculentum
AA46186.1	AF156679	Nicotiana plumbaginifolia	AA34159.1	M20241	Lycopersicon esculentum
CA869824.1	AJ271439	Prunus persica	CA33711.1	M21317	Pentaria x hybrida
AA34052.1	M27888	Nicotiana plumbaginifolia	CA57492.1	X81962	Pinus sativum
AAF98344.1	AF275745	Lycopersicon esculentum	CA41406.1	X85816	Pinus sylvestris
AA55399.1	AF179442	Lycopersicon esculentum	CA59049.1	X84308	Hordeum vulgare
AA34094.1	M60489	Nicotiana plumbaginifolia	BA65793.1	AF010321	Oryza sativa
CA54046.1	X76536	Solanum tuberosum	RAF5568.1	AF110786	Volvox carterii f. nagariensis
AA34173.1	M60166	Lycopersicon esculentum	CA41407.1	X58517	Pinus sylvestris
AA34098.1	M60490	Nicotiana plumbaginifolia	CA33330.1	X15258	Lycopersicon esculentum
CAC29435.1	AJ310523	Vicia faba	CA50763.1	X71965	Pyrobolus stellata
BA06629.1	D31843	Oryza sativa	AA84545.1	L19651	Chloroplast. Pinus sativum
CAB85495.1	AJ132892	Medicago truncatula	AAF4703.1	AF241525	Alonsoa meridionalis
CAB85494.1	AJ132891	Medicago truncatula	CA45523.1	X64198	Nicotiana tabacum
AA46187.1	AF156683	Nicotiana plumbaginifolia	AA55569.1	AF110787	Volvox carterii f. nagariensis
AA33179.1	AJ029190	Lilium longiflorum	AA34140.1	M17633	Lycopersicon esculentum
AA34099.1	M60491	Nicotiana plumbaginifolia	CA67558.1	AF094776	Oryza sativa
CA52107.1	X73901	Dunalitella bioculata	RAF23819.1	AF218305	Hordeum vulgare
BA849402.1	U54630	Dunalitella bioculata	CA46235.1	X65119	Chlamydomonas reinhardtii
AA601028.1	AZ289025	Cucumis sativus	AD03734.1	AF104633	Chlamydomonas reinhardtii
AA41348.1	U38965	Vicia faba	AD03733.1	AF104632	Chlamydomonas reinhardtii
AA34096.1	M60492	Nicotiana plumbaginifolia	AA34186.1	J03558	Lycopersicon esculentum
AA220600.1	U08984	Zea mays	AG28464.1	AF195794	Chlamydomonas reinhardtii
AA220601.1	U08985	Zea mays	CA41404.1	X58514	Pinus sylvestris
AA220602.1	AF308816	Hordeum vulgare	CA41405.1	X58515	Pinus sylvestris
AA321118.1	AF308816	Hordeum vulgare	CA78900.1	Z16408	Pinus sylvestris
CAC10554.1	AJ295612	Lycopersicon esculentum			
RAF97591.1	AF263917				

SEQ ID NO. 452	AMC48396.1	U20260	Glycine max	ABAB1683.1	AF000372	Vitis vinifera
	AMC59530.1	M31545	Hordeum vulgare	ABAB6473.1	AF028237	Ipomoea purpurea
	ANA91881.1	L39279	Lycopersicon esculentum	BAAB36412.1	AB012116	Vigna mungo
	ANA46786.1	X65974	Nicotiana tabacum	SEQ ID NO. 460		
	CAA46786.1	X65973	Nicotiana tabacum	ADAD29050.1	AF132855	Gossypium hirsutum
	CAA47861.1	U03632	Chlamydomonas reinhardtii	ADAD29049.1	AF132854	Gossypium hirsutum
	AAA18862.1	U03633	Chlamydomonas reinhardtii	SEQ ID NO. 462		
				CAB56225.1	AJ133278	Hordeum vulgare
SEQ ID NO. 458				SEQ ID NO. 464		
BAAB78745.1	AB023482	Oryza sativa		AAK15322.1	AF332134	Chloroplast Medicago sativa
				BAAB33755.2	AB017480	Nicotiana tabacum
SEQ ID NO. 459				AAAD17230.1	AF117339	Nicotiana tabacum
CAA81057.1	Z25802	Petunia x hybrida		CAA09935.1	AJ012165	Capsicum annuum
CAA50377.1	X71060	Petunia x hybrida		CAA06853.1	AJ006095	Cicer arietinum
CAA50376.1	X71059	Petunia x hybrida		BAAB57906.1	AB001684	Chlorella vulgaris
BAAB36484.1	AB031274	Scutellaria baicalensis		SEQ ID NO. 475		
BAAB36410.1	AB012114	Vigna mungo		AAAD27982.2	AF139470	Vigna radiata
AAAF61647.1	AF190634	Nicotiana tabacum		AAAB34146.1	M32606	Lycopersicon esculentum
BAAB93039.1	AB033758	Citrus unshiu		AAAB44143.1	M32605	Lycopersicon esculentum
BAAB36411.1	AB012115	Vigna mungo		AAAB44146.1	U23190	Zea mays
AAAD51776.1	AF116858	Phaseolus vulgaris		AAAB37111.1	M21317	Petunia x hybrida
AAAB48444.1	U82367	Solanum tuberosum		CAAB41406.1	X58516	Pinus sylvestris
AAAB98390.1	XZ287143	Brassica napus		CAAB37492.1	X51962	Pinus sativum
BAAB19659.1	AB020818	Perilla frutescens		CAAB32197.1	X14036	Lycopersicon esculentum
AAAD4156.1	AF101972	Phaseolus lunatus		AAAB34159.1	M20241	Lycopersicon esculentum
BAAB41017.1	AB047090	Vitis labrusca x Vitis vinifera		CAAB50763.1	X71965	Lycopersicon esculentum
BAAB41020.1	AB047093	Vitis vinifera		CAAB90684.1	Z50801	Pyrobrotis stellata
BAAB90787.1	AB038248	Ipomoea batatas		AAAC14566.1	AF058796	Oryza sativa
BAAB41022.1	AB047095	Vitis vinifera		AAAD27878.1	AF139466	Vigna radiata
BAAB41026.1	AB047099	Vitis vinifera		AAAF13731.1	AF002248	Pinus sativum
BAAB41024.1	AB047097	Vitis vinifera		CAAB57877.1	X82497	Nicotiana tabacum
BAAB36421.1	AB013596	Perilla frutescens		CAAB33330.1	X15258	Lycopersicon esculentum
BAAB41018.1	AB047091	Vigna mungo		AAAF90200.1	AF287276	Hordeum vulgare
BAAB36572.1	AB009370	Vigna mungo		AAAC67557.1	AF094775	Oryza sativa
BAAB41025.1	AB047098	Vitis vinifera		CAAB34140.1	M17633	Lycopersicon esculentum
BAAB41021.1	AB047094	Vitis vinifera		CAAB45523.1	X64198	Nicotiana tabacum
BAAB41019.1	AB047092	Vitis vinifera		AAAB34186.1	J03558	Lycopersicon esculentum
BAAB41023.1	AB047096	Vitis vinifera				
BAAB1682.1	AF000371	Vitis vinifera				

CMA41407.1	X58517	Pinus sylvestris	CMA1414.1	AJ223496	Brassica juncea
CMA49149.1	X69215	Pisum sativum	BAH10902.1	D64037	Pisum sativum
AAA68425.1	X34396	Polystichum munifitum	AAH46618.1	M83086	Medicago sativa
CMA57407.1	X81808	Picea abies	AAH41903.1	L39371	Medicago sativa
CMA41405.1	X58515	Pinus sylvestris	AAH40180.1	AF271995	Oryza sativa
CMA41404.1	X58514	Pinus sylvestris	AAH42549.1	X59925	Sorghum bicolor
AAH44703.1	AF241525	Alonsoa meridionalis	CMA07610.1	AJ0007705	Triticum aestivum
CMA33903.1	X15694	Sinapis alba	AAH09588.1	AF011302	Vicia faba
CMA34459.1	X16436	Sinapis alba	AAH42288.1	AF268091	Chloris gayana
AAH23819.1	AF218305	Hordeum vulgare	CMA33317.1	X15239	Zea mays
SEQ ID NO. 476			BAH28170.1	AB012228	Zea mays
AAH18633.1	JA9175	Amaranthus hypochondriacus	CMA4267.1	X65137	Sorghum bicolor
AAH45504.1	X64143	Flaveria trinervia	CMA39197.1	X5664	Sorghum bicolor
AAH60714.1	AF008339	Gossypium hirsutum	CMA33316.1	X15238	Zea mays
AAH17619.1	AF248080	Flaveria trinervia	CMA33633.1	X15642	Zea mays
AAH2469.1	X90982	Solanum tuberosum	CMA32728.2	X15488	Mesembryanthemum crystallinum
CMA47437.1	X67053	Solanum tuberosum	AAH45696.1	AF159051	Picea abies
CMA31956.1	X13660	Mesembryanthemum crystallinum	CMA60626.1	X87148	Vanilla planifolia
AAH88829.1	Z48966	Flaveria trinervia	CMA60627.1	X87149	Vanilla planifolia
AAH17618.1	AF248079	Glycine max	CMA62747.1	X91404	Melwitschia mirabilis
BAH01560.1	D10717	Glycine max	SEQ ID NO. 477		
AAH45505.1	X64144	Flaveria trinervia	CMA65042.1	X95727	Brassica juncea
CMA41758.1	X59016	Nicotiana tabacum	AAH44415.1	U23189	Zea mays
CMA65170.1	AJ243416	Lycopersicon esculentum	CMA44777.1	X63052	Hordeum vulgare
CMA28225.1	AJ286750	Sesbania rostrata	AAH46414.1	U23188	Zea mays
BAH03100.1	D13998	Glycine max	AAH50310.1	X36064	Prunus persica
BAH23419.1	AB008540	Glycine max	AAH70556.1	AF017998	Tetraselmis sp. RC-15
CMA55700.1	X79090	Picea abies	CMA32108.1	X13908	Oryza sativa
CMA096807.1	AJ011844	Solanum tuberosum	BAH77273.1	AB026686	Physcomitrella patens
CMA65171.1	AJ243417	Lycopersicon esculentum	CMA32658.1	X14506	Pinus sylvestris
CMA32727.1	X14587	Mesembryanthemum crystallinum	AAH80591.1	U21111	Solanum tuberosum
AAH31452.1	AF135371	Lotus corniculatus	CMA0284.1	AJ7131044	Cicer arietinum
BAH03094.1	D63661	Saccharum sp.	AAH34147.1	M14443	Lycopersicon esculentum
AAH33164.1	M86661	Brassica napus	AAH80589.1	U20983	Solanum tuberosum
CMA43601.1	X61504	Flaveria trinervia	CMA32109.1	X13909	Oryza sativa
CMA41072.1	Z25853	Flaveria australasica	BAH00536.1	D00641	Oryza sativa
AAH28444.1	AF288382	Phaseolus vulgaris	AAH80593.1	U21113	Solanum tuberosum
CMA92209.1	Z68125	Amaranthus hypochondriacus	AAH25775.1	AF072951	Medicago sativa
CMA43709.1	X61489	Zea mays	AAH80594.1	U21114	Solanum tuberosum
CMA11415.1	AJ223497	Brassica juncea	AAH33396.1	M29334	Lemna gibba

AMG36665.1	AF130016	Beta vulgaris	CA889050.1	Z49191	Beta vulgaris
CAH11031.1	AJ222379	Pisum sativum	AA931343.1	AF250327	Oryza sativa
CAH55594.1	AL117264	Oryza sativa	AA934356.1	AF126053	Zea mays
BAH39960.1	AF003020	Oryza sativa	AA934358.1	AF126055	Zea mays
BAH39965.1	AF003018	Oryza sativa	AA974758.1	AF126055	Brassica rapa
AA0404835.1	AF032974	Oryza sativa	AA96980.1	LI9093	Mitochondrion Pisum sativum
BAH68680.1	AF028454	Barbula unguiculata	AA910815.2	AJ222545	Nicotiana tabacum
AACT57777.1	AF072694	Oryza sativa	AA913429.1	AF233446	Physcomitrella patens
AAAT78563.1	AF026438	Attriplex lentiformis	CA898190.1	AF233446	Lotus japonicus
AAH33030.1	N93041	Mesembryanthemum crystallinum	CAB62075.1	AJ251210	Medicago sativa
AAH33035.1	AF132671	Nicotiana glumbaginifolia	CAB55093.1	S79308	Gossypium hirsutum
CAB65369.1	AJ250832	Pisum sativum	AA032124.1	AF051223	Picea mariana
CAB65371.1	AJ250834	Pisum sativum	AA047828.1	AF165925	Gossypium hirsutum
CAB65370.1	AJ250833	Pisum sativum	AA035094.1	S79309	Gossypium hirsutum
ANG00425.1	AF250933	Hordeum vulgare	AA043430.1	AF233447	Physcomitrella patens
AC005146.1	AF049065	Pinus radiata	BAH84494.1	AS029510	Oryza sativa
CAB55559.1	AJ237943	Triticum aestivum	AA034355.1	AF126052	Zea mays
AA0404833.1	AF032972	Oryza sativa	AA034323.1	AF239751	Tradescantia virginiana
AC076470.1	X93171	Solanum tuberosum	BAH34775.1	AF001659	Oryza sativa
CAB63659.1	X93171	Hordeum vulgare	BAH84492.1	AS029508	Oryza sativa
CAB55558.1	AJ237942	Triticum aestivum	BAH84493.1	AS029509	Oryza sativa
BAH25197.1	AB012138	Lycopersicon esculentum	AA034357.1	AF126054	Zea mays
AA0404832.1	AF032971	Oryza sativa	AA045722.1	AF161018	Erysimum cheiri
AC099473.1	AF039201	Pinus caribaea	AAH34253.1	L08128	Volvox carter
AAH20245.1	U01963	Hordeum vulgare	CAH04701.1	AJ001367	Daucus carota
AAH34270.1	M63223	Triticum aestivum	CAH98172.1	Z73944	Lotus japonicus
AAH34268.1	M21962	Triticum aestivum	CAH90081.1	Z49901	Pisum sativum
SEQ ID NO. 490			CAH90082.1	Z49902	Pisum sativum
CAB62537.1	AJ012583	Hevea brasiliensis	CAH90080.1	Z49900	Pisum sativum
AAH33357.1	M36986	Hevea brasiliensis	CAH98176.1	Z73948	Lotus japonicus
CAH05978.1	AJ003196	Hevea brasiliensis	CAH98175.1	Z73947	Lotus japonicus
SEQ ID NO. 491			CAH98174.1	Z73946	Lycopersicon esculentum
AAH44769.1	AF146341	Physcomitrella patens	CAH99021.1	Z49152	Lotus japonicus
AAH44768.1	AF146340	Physcomitrella patens	AAH37726.1	U38471	Beta vulgaris
AAH26198.1	AF115476	Physcomitrella patens	AAH34253.1	L08130	Brassica rapa
AAH27450.1	AF329814	Oryza sativa subsp. japonica	SEQ ID NO. 492		Volvox carter
AAH28764.1	AF218361	Oryza sativa subsp. japonica	CAH45119.1	X63558	Brassica oleracea
CAH98189.1	Z73965	Lotus japonicus	CAB07804.1	Z33769	Nicotiana tabacum
BAH76424.1	AS024996	Cicer arcticum	AAH74625.1	U51773	Oryza sativa

RAAC68523.1	AF045678	Thellungiella salsauginea	RAF5791.1	AF271892	Pisum sativum
RAAC68514.1	AF045669	Arabis drummondii	RAAC0306.1	AF156667	Vigna radiata
RAAC68524.1	AF045679	Nasturtium officinale	CAH68193.1	X99937	Spinacia oleracea
RAAC68522.1	AF045677	Thlaspi arvense	RAA95704.1	AB042643	Oryza sativa
RAAC68513.1	AF045668	Polanisia dodocandra	RAA95705.1	AB042644	Oryza sativa
RAAC68518.1	AF045673	Capsella bursa-pastoris	RAAC020980.1	AF079782	Zea mays
RAAC68515.1	AF045670	Barbarea vulgaris	SEQ ID NO. 532		
RAAC68521.1	AF045676	Sisymbrium pinnata	BAK95893.1	AF002071	Oryza sativa
RAAC68520.1	AF045675	Sisymbrium altissimum	RAH09771.1	U67422	Zea mays
RAAC68517.1	AF045672	Brassica oleracea	RAAC29566.1	AF302082	Nicotiana tabacum
RAAC68516.1	AF045671	Brassica nigra	BAK78764.1	AB023482	Oryza sativa
RAAC68512.1	AF045667	Carica papaya	CAAC21965.1	AF028699	Brassica napus
CAH40137.1	X56802	Avena sativa	RAF91323.1	AF244889	Glycine max
RAAC68511.1	AF132498	Brassica napus	RAF91324.1	AF244090	Glycine max
BAK21617.1	AB005880	Nicotiana tabacum	CAK51834.1	00069	Oryza sativa
BAK2607.1	AF026809	Ipomoea nil	CAC20842.1	AJ250467	Pinus sylvestris
SEQ ID NO. 501			BAK06538.1	D31737	Nicotiana tabacum
CAK52201.1	X74072	Lycopersicon esculentum	RAAG00510.1	AF285172	Phaseolus vulgaris
SEQ ID NO. 513			RAAC27894.1	AF023164	Zea mays
BAK36543.1	U77935	Phaseolus vulgaris	RAK91322.1	AF244888	Glycine max
SEQ ID NO. 514			RAK61622.1	XK007545	Brassica napus
CAK32121.1	X13934	Lycopersicon esculentum	RAK59906.1	AF197947	Glycine max
CAK90564.1	Z50185	Populus nigra	RAK43396.1	AF131222	Lophopyrum elongatum
CAK28398.1	X04693	Spinacia oleracea	BAK44787.1	AF000359	Oryza sativa
CAK90565.1	Z50186	Populus nigra	BAK83373.1	AF000391	Oryza sativa
RAK68655.1	AF031545	Fritillaria agrestis	AAK11674.1	AF339747	Lophopyrum elongatum
CAK78108.1	AF093636	Oryza sativa	RAAC27895.1	AF023165	Zea mays
RAK63590.1	AF009412	Oryza sativa	BAK94509.1	AB041503	Populus nigra
CAK82201.1	Z28347	Hordeum vulgare	BAK94510.1	AB041504	Populus nigra
CAK68696.1	U00704	Hordeum vulgare	RAK61708.1	U93048	Daucus carota
BAK77274.1	AB026687	Physcomitrella patens	RAK36318.1	AF053127	Malus x domestica
RAK33069.1	L07282	Chlamydomonas reinhardtii	RAK74241.1	AF220603	Lycopersicon esculentum
RAK33078.1	J05524	Chlamydomonas reinhardtii	RAK1569.1	U59316	Lycopersicon esculentum
RAK03610.1	AF114235	Scenedesmus obliquus	RAK51569.1	AF318493	Lycopersicon hirsutum
BAK84778.1	AB017810	Pedicularis boryanum	RAK59905.1	AF197946	Glycine max
SEQ ID NO. 521			SEQ ID NO. 538		
BAK03763.1	D16247	Nicotiana sylvestris	RAK39440.1	AF132002	Petunia x hybrida
			RAK39439.1	AF132001	Petunia x hybrida
			RAK32659.1	AF253971	Picea abies

CAR39279.1	X55750	Solanum tuberosum	BAH96628.1	AF002482	Oryza sativa
CAR35523.1	X79378	Sorghum bicolor	BAH05649.1	D26602	Nicotiana tabacum
CAR34356.1	X16280	Oryza sativa	BAH07898.1	X82548	Hordeum vulgare
ANC16054.1	AF061019	Coleochaete scutata	CAN93929.1	AF062479	Oryza sativa
ANC38514.1	U81049	Pisum sativum	CAN65244.1	X95997	Solanum tuberosum
ABH18644.1	U76193	Pisum sativum	AAAD23582.1	AF128443	Glycine max
CAR33873.1	X15864	Oryza sativa	AAAF19403.1	AF203480	Lycopersicon esculentum
ANC64128.1	AF091810	Anemia phyllitidis	AAAF19403.1	AF203481	Lycopersicon esculentum
ANC02228.1	AF044573	Brassica oleracea	CAN06556.1	X65606	Hordeum vulgare
ANC05272.1	AF049106	Glycine max	CAN07813.1	AF007990	Hordeum vulgare
ANC16055.1	AF061020	Mesostigma viride	AAAF19401.1	AF203479	Glycine max
AAF87302.1	AF281323	Magnolia denudata	BAH03688.1	AB011967	Oryza sativa
BAH09450.1	D50839	Chlamydomonas reinhardtii	BAH05457.1	U55768	Glycine max
BAH09449.1	D50838	Chlamydomonas reinhardtii	AAAD17800.1	AF090835	Mesembryanthemum crystallinum
BAH34243.1	X33963	Volvox carterii	AAAD28791.1	AF145593	Nicotiana tabacum
ANC16053.1	AF061018	Scheffelia dubia	AAAD2098.1	U70923	Nicotiana tabacum
AAH33433.1	J01238	Zea mays	CAN82093.1	X30332	Spinacia oleracea
ANC6126.1	AF091808	Anemia phyllitidis	CAN06554.1	X65604	Hordeum vulgare
CAH3871.1	X13862	Oryza sativa	BAH34675.1	AB011670	Trifolium aestivum
BAH3940.1	J01297	Glycine max	SEQ ID NO. 554		
BAH25911.1	AB013098	Namochloris bacillaris	AAH69017.1	AF261654	Dianthus caryophyllus
BAH48335.1	AF090969	Selaginella apoda	CAN09582.1	AJ298994	Fagus sylvatica
BAH48334.1	AF090968	Selaginella apoda	AAH00419.1	AF247568	Nicotiana tabacum
CAR39276.1	X55746	Solanum tuberosum	SEQ ID NO. 555		
SEQ ID NO. 553			AAH70002.1	AF213936	Prunus dulcis
AAH67262.1	AF165186	Nicotiana tabacum	AAH70002.1	AF213936	Prunus dulcis
CAR04261.2	AJ000728	Lycopersicon esculentum	AAH32034.1	AF023472	Hordeum vulgare
AAH33393.1	U83625	Zea mays	AAH01600.1	AF016713	Lycopersicon esculentum
BAH32405.1	AB055514	Nicotiana tabacum	AAH07875.1	AF140606	Oryza sativa
CAC24705.1	AJ302651	Nicotiana tabacum	AAH16016.1	AF080545	Nepenthes alata
AAH40578.1	AF216314	Oryza sativa	CAC07206.1	AF278966	Brassica napus
BAH06731.1	D31964	Nicotiana tabacum	BAH69642.1	AF000392	Lotus japonicus
AAH33879.1	AF325168	Nicotiana tabacum	CAN93316.1	Z69370	Cucumis sativus
CAR08758.1	AJ009609	Brassica napus	BAH19750.1	AB052788	Glycine max
CAR08757.1	AJ009608	Brassica napus	BAH19757.1	AB052785	Glycine max
BAH05648.1	D26601	Nicotiana tabacum	BAH19756.1	AB052784	Glycine max
AAH34436.1	AF172282	Oryza sativa	AAH42860.1	AF154930	Prunus dulcis
CAR08395.1	AJ010091	Brassica napus	SEQ ID NO. 556		
CAR08397.1	AJ010093	Brassica napus	BAH20848.1	AB004932	Vigna radiata
CAR1142.1	Y10036	Cucumis sativus			

RAAF91309.1	AF229686	Rubus idaeus	RAAF64913.1	U23787	Sorghum bicolor
BAH01838.1	U50846	Nicotiana tabacum	RAF74000.2	AF144507	Pseudotsuga menziesii
BAH07828.1	D43773	Nicotiana tabacum	RAAF74021.2	AF144528	Pseudotsuga menziesii
ACQ39366.1	AF008184	Populus tremuloides	SEQ ID NO. 565		
RAAC24504.1	AF041050	Populus x generosa	AAAC32149.1	AF051249	Picea mariana
RAAG43823.1	AF212317	Populus tremuloides	AAAF43837.1	AF166114	Chloroplast Mesostigma viride
RAAC24503.1	AF041049	Capsicum annuum	RAAC72192.1	AF069908	Zea mays
AAH18637.1	U50845	Nicotiana tabacum	RAAC72193.1	AF069909	Zea mays
RAA33842.1	U62755	Solanum tuberosum	RAAC72194.1	AF069910	Zea mays
RAAD40654.1	AF150686	Solanum tuberosum	RAAB01223.1	U56697	Pisum sativum
RAAF73733.1	AF052222	Lolium perenne	RAAD2077.1	AF124755	Pinus banksiana
RAAF73734.1	AF052223	Lolium perenne	RAAD38941.1	AF143812	Lycopersicon esculentum
RAAF91310.1	AF239687	Rubus idaeus	RAAD56390.2	AF182286	Artemisia annua
RAAC39365.1	AF008183	Populus x generosa	SEQ ID NO. 566		
CAAC31696.1	X13324	Petroselinum crispum	BAAD2018.1	D11465	Spinacia oleracea
CAAC31697.1	X13325	Petroselinum crispum	CAAB80071.1	Z37990	Pisum sativum
CAAC36850.1	X52623	Oryza sativa	RAAF91407.1	AF271362	Lolium perenne
RAAB22382.1	U39404	Pinus taeda	RAAC25999.1	AF072289	Mesembryanthemum crystallinum
RAAB22383.1	U39405	Pinus taeda	RAAF55509.1	AF108881	Capsicum annuum
RAAB2668.1	U12013	Pinus taeda	RAAB57596.1	U72142	Helianthus annuus
RAAD3668.1	U12012	Pinus taeda	RAAO01310.1	D10559	Spinacia oleracea
RAAD0666.1	AF150687	Solanum tuberosum	CAAC50511.1	X71386	Pisum sativum
RAAF73997.2	AF144504	Picea smithiana	RAAO37598.1	D16292	Oryza sativa
RAAF73998.2	AF144505	Cathaya argyrophylla	RAAA19005.1	U10283	Flaveria bidentis
RAAF73999.2	AF144502	Pinus armandii	RAAB40609.1	U55019	Saccharum officinarum
RAAF73994.2	AF144501	Pinus armandii	RAAA19004.1	U10282	Flaveria bidentis
RAAF73996.2	AF144503	Pinus armandii	CAAA93030.1	U50150	Glycine max
CAAA49575.1	X69954	Glycine max	RAAF08537.1	AF191098	Lycopersicon esculentum
RAAF74019.2	AF144526	Teucrium canadensis	BAAF6460.1	AB029400	Brassica rapa
RAAF74004.2	AF144511	Pseudotsuga sinensis	SEQ ID NO. 567		
RAAF74016.2	AF144523	Pseudotsuga sinensis	RAAF60293.1	AF233745	Lycopersicon esculentum
RAAF74022.2	AF144529	Neotoma atlantica	SEQ ID NO. 568		
RAAF74018.2	AF144525	Teucrium canadensis	RAAG28436.1	AF195029	Glycine max
RAAF74002.2	AF144509	Pseudotsuga sinensis	RAAG28435.1	AF195028	Glycine max
RAAF74001.2	AF144508	Pseudotsuga menziesii	RAAD61188.1	AF156691	Nicotiana glauca
RAAF73993.2	AF144500	Pinus banksiana	CAAB6234.1	X99972	Brassica oleracea
RAAF73992.1	AF144499	Pinus banksiana			
CAAB07359.1	X278455	Juglans nigra			
RAAF74003.2	AF144510	Pseudotsuga sinensis			
RAAF73997.2	AF144506	Pseudotsuga menziesii			
RAAF74007.2	AF144514	Abies firma			

CA808254.1	248221	Phaseolus vulgaris	AAF29975.1	AF188062	Lactuca sativa
CA83856.1	AF156101	Chlamydomonas reinhardtii	AA041766.1	AF111842	Hevea brasiliensis
BA932244.1	AB038648	Vicia faba	AA041766.1	AF111843	Hevea brasiliensis
CA83345.1	MG0215	Zea mays	AA041766.1	AF082326	Haemato-coccus pluvialis
CA856766.1	X80788	Medicago sativa subsp. x varia	AA041766.1	AF082326	Haemato-coccus pluvialis
CA87803.1	293768	Nicotiana tabacum	AA041766.1	AF082326	Haemato-coccus pluvialis
CA805493.1	AF002487	Nicotiana tabacum	AA041766.1	AF082326	Haemato-coccus pluvialis
CA807804.1	293769	Nicotiana tabacum	AA041766.1	AF082326	Nicotiana tabacum
CA82264.1	228632	Acetabularia cliftonii	AA041766.1	AF082326	Daucus carota
CA807805.1	293770	Nicotiana tabacum	AA041766.1	AF082326	Chlamydomonas reinhardtii
CA845119.1	X63558	Brassica oleracea	AA041766.1	AF082326	Petunia x hybrida
CA805492.1	AF002486	Medicago sativa	AA041766.1	AF082326	Datisca glomerata
AA74625.1	U31773	Oryza sativa	AA041766.1	AF082326	Nicotiana tabacum
CA805494.1	AJ002488	Medicago sativa	AA041766.1	AF082326	Petunia x hybrida
CA804686.1	X57438	Brassica napus	AA041766.1	AF082326	Petunia x hybrida
CA87386.1	247077	Malus x domestica	AA041766.1	AF082326	Oryza sativa
CA87387.1	247078	Malus x domestica	AA041766.1	AF082326	Oryza sativa
BA932334.1	AB038787	Vicia faba	AA041766.1	AF082326	Brassica rapa
CA81128.1	AJ298828	Fagus sylvatica	AA041766.1	AF082326	Brassica rapa
BA822335.1	AB038788	Vicia faba	AA041766.1	AF082326	Petunia x hybrida
CA809274.1	AJ298086	Fagus sylvatica	AA041766.1	AF082326	Petunia x hybrida
BA822337.1	AB038790	Vicia faba	AA041766.1	AF082326	Petunia x hybrida
BA822336.1	AB038789	Vicia faba	AA041766.1	AF082326	Petunia x hybrida
BA82336.1	AB038791	Vicia faba	AA041766.1	AF082326	Petunia x hybrida
BA82336.1	AB038791	Vicia faba	AA041766.1	AF082326	Petunia x hybrida
AMG25952.1	AF196285	Medicago sativa subsp. x varia	AA041766.1	AF082326	Petunia x hybrida
SEQ ID NO. 572					
AAF36996.1	AF236092	Brassica oleracea var. botrytis	AA041766.1	AF082326	Petunia x hybrida
AAF29978.1	AF188065	Oryza sativa	AA041766.1	AF082326	Petunia x hybrida
BA867743.1	U48963	Clarkia breweri	AA041766.1	AF082326	Petunia x hybrida
BA840974.1	AF188061	Nicotiana tabacum	AA041766.1	AF082326	Petunia x hybrida
AAF29974.1	AF188061	Adonis palaeotina	AA041766.1	AF082326	Petunia x hybrida
AAF29973.1	AF188060	Adonis palaeotina	AA041766.1	AF082326	Petunia x hybrida
CA857947.1	X82627	Clarkia breweri	AA041766.1	AF082326	Petunia x hybrida
AAF29976.1	AF188063	Lactuca sativa	AA041766.1	AF082326	Petunia x hybrida
BA840973.1	AF049815	Nicotiana tabacum	AA041766.1	AF082326	Petunia x hybrida
AAF29977.1	AF188064	Tagetes erecta	AA041766.1	AF082326	Petunia x hybrida
AMG10423.1	AF251011	Tagetes erecta	AA041766.1	AF082326	Petunia x hybrida
BA894132.1	AF031079	Camptotheca acuminata	AA041766.1	AF082326	Petunia x hybrida
BA894133.1	AF031080	Camptotheca acuminata	AA041766.1	AF082326	Petunia x hybrida
BA867742.1	U48962	Clarkia xantiana	AA041766.1	AF082326	Petunia x hybrida
SEQ ID NO. 574					
AAF29975.1	AF051246	Picea mariana	AA041766.1	AF082326	Petunia x hybrida
AA041766.1	AF051246	Picea mariana	AA041766.1	AF082326	Petunia x hybrida

[illegible]

SEQ. ID NO.	576
AA9A96980.1	L19093
CA9A98050.1	L49191
CA9A10815.2	AJ22545
AAK27450.1	AF329814
AAK27854.1	AF21381
CA9A98189.1	273961
CA9A3358.1	AF126055
BA976424.1	ABC24996
CA9F91343.1	AF250327
CA9A93436.1	AF126053
CA9B97456.1	AF024230
CA9B94759.1	AF146341
AA044769.1	AF146340
AA044768.1	AF115476
AA0261398.1	

RAF19807.1	AF180356	Brassica oleracea	AAB90919.1	AF020787	Oryza sativa
RAF19403.1	AF203481	Lycopersicon esculentum	SEQ ID NO. 590		
RAF19402.1	AF203480	Lycopersicon esculentum	RAF09422.1	M6829	Mitochondrion Marchantia
BAA05648.1	D26601	Nicotiana tabacum	polymorphism		
CAK73068.1	Y12465	Sorghum bicolor	SEQ ID NO. 603		
BRA13440.1	B8011670	Triticum aestivum	AAD02328.1	AF044573	Brassica oleracea
IPM050436.1	D87707	Ipomoea batatas	AAC9651.1	U88461	Striga asiatica
RAF23900.1	AF194413	Oryza sativa	AAC9652.1	U88462	Striga asiatica
RAF23901.2	AF194414	Oryza sativa	RAF04038.1	AF234528	Avena nuda
RAF17800.1	AF090835	Mesembryanthemum crystallinum	BAA99214.1	AF032361	Mimosa pudica
CAK73067.1	Y12464	Sorghum bicolor	BAA99214.1	AF032361	Mimosa pudica
BAA12715.1	D85039	Zea mays	AAC31886.1	AF059484	Gossypium hirsutum
CAA89202.1	Z49233	Chlamydomonas eugametos	CAA39280.1	X55751	Solanum tuberosum
RAF21062.1	AF216527	Dunaliella tertiolecta	CAA5149.1	X63603	Nicotiana tabacum
RAF080693.1	U69174	Glycine max	RAF71265.1	AF246715	Phalaenopsis sp. 'True Lady'
CAA39936.1	X56599	Daucus carota	CAA33874.1	X15865	Oryza sativa
BAA47181.1	S82324	Zea mays	CAA39278.1	X55749	Solanum tuberosum
BAA12691.1	D84507	Zea mays	AAD41039.1	AF112538	Malva pusilla
RAF01179.1	AF289237	Zea mays	RAF10041.1	AF288226	Setaria italica
CAA58750.1	X83869	Daucus carota	RAF03592.1	AF172094	Picea rubens
BAA12692.1	D84508	Zea mays	AAD03741.1	AF111812	Brassica napus
CAA57157.1	X81394	Oryza sativa	CAF7899.1	X67466	Pisum sativum
RAF023582.1	AF128443	Glycine max	RAF22005.1	AF2282624	Helianthus annuus
BAA19553.1	D54036	Oryza sativa	CAA8609.1	X86649	Pisum sativum
CAA65244.1	X55997	Solanum tuberosum	RAF51643.1	AF143208	Vigna radiata
CAF07481.1	A007366	Zea mays	CAA39281.1	X55752	Solanum tuberosum
RAF6110.1	A0073166	Oryza sativa	CAA34356.1	X16280	Oryza sativa
CAA6500.1	X96723	Medicago sativa	CAA55923.1	X79378	Sorghum bicolor
AAA69507.1	U28376	Zea mays	RAF71264.1	AF246714	Phalaenopsis sp. 'True Lady'
RAF28192.2	AF115406	Solanum tuberosum	RAF38512.1	U91047	Pisum sativum
BAA22410.1	D38452	Zea mays	BAA38511.1	U91046	Pisum sativum
CAA71142.1	U10036	Cucumis sativus	BAA18641.1	U76191	Pisum sativum
RAF636872.1	AF239819	Zea mays	BAA18641.1	U76190	Pisum sativum
RAF04324.1	U73937	Nicotiana tabacum	CAA52028.1	X90378	Pisum sativum
RAF02698.1	DL3436	Oryza sativa	CAA39279.1	X55750	Solanum tuberosum
BAA83689.1	AB011968	Oryza sativa	RAC64127.1	AF091809	Atemia phyllitidis
CAA72362.1	Y11649	Zea mays	RAC16054.1	AF061019	Coleochaete scutata
CAA43659.1	X51387	Zea mays	RAF38514.1	U91049	Pisum sativum
BAA05649.1	D26602	Nicotiana tabacum	RAF18644.1	U76193	Pisum sativum
			RAC16055.1	AF061020	Mesostigma viride

RA064128.1	AF091810	Anemia phyllitidis	CBA44820.1	X63106	Nicotiana tabacum
RAA33433.1	J01238	Zea mays	BAA34919.1	AF0012716	Salix gilgiana
RAA05272.1	AF09106	Glycine max	BA065162.1	AF002667	Solanum commersonii
RAA33873.1	X15864	Oryza sativa	BA07345.1	X66874	Phaseolus vulgaris
RAA87302.1	AF281323	Magnolia denudata	BA091475.1	AF035458	Spinacia oleracea
RAA09450.1	D50839	Chlamydomonas reinhardtii	BA096660.1	AF039084	Spinacia oleracea
RAA09449.1	D50838	Chlamydomonas reinhardtii	BA091472.1	AF035457	Spinacia oleracea
RAA06053.1	AF061018	Scherffelia dubia	SEQ ID NO. 607		
RAA33940.1	J01297	Glycine max	BA05641.1	U41385	Ricinus communis
CBA23728.1	V00450	Glycine max	BA028260.1	AF131223	Datisla glomerata
CBA34243.1	X33963	Volvox carteri	CBA77575.1	Z11499	Medicago sativa
RAA25911.1	AB013098	Nannochloris bacillaris	AJ277377	AF277377	Triticum turgidum subsp. durum
RAA48335.1	AF090969	Selaginella apoda	CAC21230.1	AF277379	Triticum turgidum subsp. durum
RAA48336.1	AF090970	Cosmarium botrytis	BA019660.1	U11496	Triticum aestivum
RAA64129.1	AF091811	Psilotum nudum	BA018780.1	AB047268	Cucumis sativus
CBA339276.1	X55746	Solanum tuberosum	CAC21229.1	AJ277378	Triticum turgidum subsp. durum
SEQ ID NO. 606			CAC21231.1	AJ277380	Triticum turgidum subsp. durum
RAA88009.1	AF035414	Brassica napus	BA092322.1	AB039278	Oryza sativa
RAA88134.1	AF034618	Spinacia oleracea	BA055566.1	AF110784	Volvox carteri f. nagariensis
CBA47946.1	X67711	Oryza sativa	BA02069.1	AF036939	Chlamydomonas reinhardtii
CBA72129.1	AJ249330	Cucumis sativus	BA049896.1	AF027727	Chlamydomonas reinhardtii
CBA72130.1	AJ249331	Cucumis sativus	CBA72092.1	F11209	Nicotiana tabacum
CBA37971.1	X54030	Lycopersicon esculentum	SEQ ID NO. 608		
RAA34134.1	AF161180	Malus x domestica	BA072047.1	AF006489	Gossypium hirsutum
RAA88133.1	AF034617	Spinacia oleracea	BA005979.1	AF003197	Lupinus albus
RAA88132.1	AF034616	Spinacia oleracea	CBA44054.1	X62123	Solanum tuberosum
RAA97316.1	AF033852	Spinacia oleracea	BA049700.1	U89839	Lycopersicon esculentum
RAA42159.1	L41253	Lycopersicon esculentum	CBA0782.1	X57557	Solanum tuberosum
RAA42685.1	X60088	Daucus carota	BA02161.1	D12637	Oryza sativa
CBA30018.1	X06932	Petunia x hybrida	BA01812.1	X59086	Zea mays
CBA43711.1	X61491	Spinacia oleracea	CBA40781.1	X57556	Zea mays
CBA37970.1	X54029	Lycopersicon esculentum	CBA33743.1	X15712	Zea mays
RAA99745.1	AF005993	Triticum aestivum	CBA33742.1	X15711	Zea mays
CBA67867.1	X99515	Pisum sativum	CBA55119.1	X95863	Triticum turgidum
CBA44620.1	X62799	Glycine max	CBA26600.1	X02842	Zea mays
RAA00730.1	N76725	Chlamydomonas reinhardtii	CBA55120.1	X95864	Triticum turgidum
RAA34139.1	I08030	Lycopersicon esculentum	CBA46311.1	X55194	Chlamydomonas reinhardtii
CBA72128.1	AJ248329	Cucumis sativus	RAA33027.1	N76669	Chlorocella festsleri
RAA21806.1	L23551	Spinacia oleracea	BA072046.1	AF006490	Gossypium hirsutum
RAA86942.1	AF031241	Glycine max			

CAM78738.1	Z15018	Oryza sativa	AAA99439.1	X24547	Volvox carteri
SEQ ID NO. 622			CAM31334.1	X12855	Volvox carteri
AA19708.1	L10634	Zea mays	AAA38604.1	X33371	Polymonella agilis
AA10489.1	U76746	Triticum aestivum	AAA38603.1	X33372	Polymonella agilis
AA20178.1	AF039287	Eleusine indica	AA063892.1	AF001379	Polymonella agilis
AAK09229.1	AC084320	Oryza sativa	AAA60386.1	X54845	Chlamydomonas incerta
AA02505.1	D13224	Oryza sativa	CAM38614.1	X54845	Pisum sativum
BA063882.1	D30717	Oryza sativa	AA01493.1	U76997	Triticum aestivum
AA02180.1	AF059289	Eleusine indica	BA082639.1	D63138	Zinnia elegans
CR455912.1	X79367	Oryza sativa	CAM38615.1	X54846	Pisum sativum
AAA38613.1	X54844	Pisum sativum	SEQ ID NO. 624		
AA010490.1	U76895	Triticum aestivum	AB023482		Oryza sativa
CMA48929.1	X69185	Arenia phyllitidis	AAAF3496.1	AF131222	Lophopyrum elongatum
BA02637.1	D63136	Zinnia elegans	AAK11674.1	AF339747	Lophopyrum elongatum
CMA49736.1	X70184	Lupinus albus	AA016628.1	AV007545	Brassica napus
AA02186.1	L10633	Zea mays	AB041503	AB041504	Populus nigra
BA063881.1	D30716	Oryza sativa	BA041504	AV028699	Populus nigra
CMA55022.1	X78143	Oryza sativa	BA04510.1	00069	Brassica napus
BA063881.1	D30716	Hordeum vulgare	CMA51834.1	00069	Oryza sativa
CR470891.1	X09741	Lupinus albus	AA03090.1	AC073405	Oryza sativa
AA05022.1	X78143	Triticum aestivum	AA031337.1	AF249318	Glycine max
BA03267.1	U47660	Glycine max	AA091336.1	AF249317	Glycine max
AA04088.1	U76745	Zinnia elegans	AA061805.1	U28007	Lycopersicon esculentum
BA02638.1	D63137	Zea mays	AA076307.1	AF220602	Lycopersicon pimpinellifolium
AA064306.1	X63927	Daucus carota	AA047424.1	U59317	Lycopersicon pimpinellifolium
CR452720.1	X74656	Eleusine indica	AA027694.1	AF023164	Zea mays
AA020181.1	AF059290	Eleusine indica	AA033377.1	AF290411	Oryza meyeriana
AA02179.1	AF059288	Triticum aestivum	AA090977.1	U67422	Zea mays
AA010487.1	U76744	Cicer arietinum	AA090977.1	U67422	Zea mays
AA067056.1	X98406	Triticum aestivum	AA027895.1	AF023165	Oryza sativa
AA010492.1	U76896	Zea mays	CMA73134.1	X12531	Brassica oleracea
CR452718.1	X74654	Zea mays	BA094516.1	AF001800	Oryza sativa
CR437060.1	X52878	Zea mays	AA01566.1	AF318490	Lycopersicon hirsutum
AA119709.1	L10636	Zea mays	AA034428.1	AF172282	Oryza sativa
CR483853.1	X33402	Solanum tuberosum	AA097692.1	Z73295	Catharanthus roseus
CR483847.1	X23382	Solanum tuberosum	BA094517.1	AF001800	Oryza sativa
CR437061.1	X52879	Zea mays	SEQ ID NO. 626		
AA119707.1	L10635	Zea mays	AA02041.1	AF020716	Triticum aestivum
CR452719.1	X74655	Zea mays	AA010241.1	Z05984	Oryza sativa
AA033102.1	X03281	Chlamydomonas reinhardtii	CAM06653.1		
BA033101.1	M10064	Chlamydomonas reinhardtii			

260

AA648835.1	AC084218	Oriza sativa	CAA39836.1	X56599	Daucus carota
AD010242.1	AF020717	Triticum aestivum	CAA08995.1	AJ010091	Brassica napus
			BAA05649.1	D26602	Nicotiana tabacum
SEQ ID NO. 628			AA019403.1	AZ030481	Lycopersicon esculentum
BAR90375.1	AB001081	Oriza sativa	AA025423.1	AF02908	Nicotiana tabacum
BB03361.1	AF002486	Oriza sativa	AA019402.1	AZ030480	Lycopersicon esculentum
CAA62901.1	X91787	Lupinus luteus	CAA65244.1	X59597	Solanum tuberosum
			CAA57898.1	X82548	Hordeum vulgare
SEQ ID NO. 629			AA019403.1	AZ030479	Glycine max
BAA96875.1	AB045121	Oriza sativa	AA023582.1	AF128443	Glycine max
BA078746.1	AB023482	Oriza sativa	AA03436.1	AF172282	Oriza sativa
AA043550.1	AF211532	Nicotiana tabacum	BAA05648.1	D26601	Nicotiana tabacum
AA090357.1	AF001080	Oriza sativa	SEQ ID NO. 634		
BA077204.1	AB026262	Cicer arietinum	AA073075.1	AF268595	Hordeum vulgare
BA090806.1	AF001168	Oriza sativa			
SEQ ID NO. 630			SEQ ID NO. 635		
AA050592.1	AF093752	Triticum aestivum	CAA85467.1	AJ250316	Brassica juncea
AA022095.1	AF308658	Typha latifolia	BAA22441.1	D63954	Zea mays
			BAA11475.1	D79979	Nicotiana tabacum
SEQ ID NO. 632			AA070334.1	D25817	Sesamum indicum
BA072901.1	AF109392	Brassica napus	AA039387.1	D59477	Perilla frutescens
			CAA07438.1	AJ007739	Solanum tuberosum
SEQ ID NO. 633			AA027933.1	AJ222969	Capsicum annuum
CAA82852.1	Z0329	Mesembryanthemum crystallinum	AA072441.1	D75745	Petroselinum crispum
BAB18105.1	AB042715	Chlamydomonas reinhardtii	AA061776.1	L22965	Chloroplast Glycine soja
BA042714	AB042714	Chlamydomonas reinhardtii	AA012821.1	AZ000717	Vernicia fordii
BA03689.1	AB011968	Oriza sativa	AA066690.1	U17063	Lamantthes douglasii
BA03688.1	AB011967	Oriza sativa	AA013527.1	AF061027	Vernicia fordii
CAA73067.1	Y12464	Sorghum bicolor	BAA22442.1	D84409	Zea mays
AA022219.1	AF141378	Zea mays	BAA22440.1	D63953	Zea mays
BA096628.1	AF002482	Oriza sativa	BA07785.2	D43688	Triticum aestivum
CAA89202.1	Z49233	Chlamydomonas eugametos	AA061774.1	L22963	Chloroplast Brassica napus
CAA73068.1	Y12465	Sorghum bicolor	AA047172	AF07172	Vernicia fordii
BAA34675.1	AB011670	Triticum aestivum	CAA45155.1	AJ011004	Vernicia fordii
AA069699.1	AF162661	Kalanchoe fedtschenkoi	AA016443.1	AF020204	Pearl millet x hortorum
BA06970.1	AF162662	Kalanchoe fedtschenkoi	AA061775.1	L22962	Brassica napus
BAA90814.1	AF001168	Oriza sativa	AA061777.1	L22964	Chloroplast Glycine soja
BA052693.1	AF004947	Oriza sativa	BAA32994.1	L01418	Brassica napus
BA0721062.1	AF216527	Dunaliella tertiolecta	BA015744.1	AF047039	Perilla frutescens
CAA71142.1	Y10036	Cucumis sativus	BAA28358.1	D84678	Triticum aestivum

BA996628.1	AF002482	Oryza sativa	CAM56503.1	AJ238612	Catharanthus roseus
AA023582.1	AF128443	Glycine max	AA047832.1	AF166332	Nicotiana tabacum
BA050649.1	D26602	Nicotiana tabacum	BA050645.1	X71654	Solanum melongena
AA051112.1	AF158091	Mesembryanthemum crystallinum	BA050635.1	D14990	Solanum melongena
CA65244.1	X95997	Solanum tuberosum	CA503132.1	X70981	Solanum melongena
CA86286.1	Z38126	Malus x domestica	AA044132.1	AF218296	Pisum sativum
CA071142.1	Y10036	Cucumis sativus	AA044151.1	AF124816	Mentha x piperita
CA078961.1	Z17313	Malus x domestica	CA070576.1	Y09424	Nepeta racemosa
CA089202.1	Z49233	Chlamydomonas eugametos	CA065580.1	X96784	Nicotiana tabacum
CA575898.1	X82548	Hordium vulgare	AA041450.1	AF124815	Mentha spicata
BA071062.1	AF216527	Dunaliella tertiolecta	AA041452.1	AF124817	Mentha x piperita
BA019573.1	AB002109	Oryza sativa	CA083941.1	Z33875	Mentha x piperita
CA080864.1	AJ235939	Medicago sativa	CA064635.1	X95342	Nicotiana tabacum
CA073067.1	Y12465	Sorghum bicolor	CA57423.1	X81829	Zea mays
CA080997.1	AJ010093	Brassica napus	CA072208.1	Y11404	Brassica napus
CA084873.1	X68410	Medicago sativa	AA014363.1	AF214009	Brassica napus
CA0131048	AJ131048	Cicer arietinum	AA014362.1	AF214008	Brassica napus
AA088537.1	AF035944	Fragaria x ananassa	AA014361.1	AF214007	Brassica napus
AA060195.1	AC084763	Oryza sativa	AA032274.1	AF081575	Petunia x hybrida
BA013608.1	D88399	Oryza sativa	SEQ ID NO. 657		
BA040983.1	AB059621	Oryza sativa	BA021153.1	AB002899	Oryza sativa
BA092214.1	AF001278	Oryza sativa	BA094219.1	AF001633	Oryza sativa
AA032743	AF132743	Oryza sativa	CA049181.1	U39289	Brassica napus
CA011861.1	AJ224164	Petunia x hybrida	BA094236.1	AF001633	Oryza sativa
CA058595.1	X83620	Petunia x hybrida	BA094238.1	AF001633	Oryza sativa
AA023900.1	AF194413	Oryza sativa	BA094224.1	AF001633	Oryza sativa
AA066608.1	AF012889	Zea mays	BA094215.1	AF001633	Oryza sativa
AA050457.1	U55768	Oryza sativa	CA049182.1	U39319	Brassica napus
SEQ ID NO. 655			SEQ ID NO. 667		
AA020113.1	M22885	Persea americana	AF01323.1	AF244889	Glycine max
CA039318.1	AF029858	Sorghum bicolor	CA020842.1	AJ250457	Pinus sylvestris
AA019701.1	L24438	Thlaspi arvense	BA036556.1	UJ7888	Ipomoea nil
BA040323.1	AB037244	Asparagus officinalis	AF01322.1	AF244888	Glycine max
BA040324.1	AB037245	Asparagus officinalis	AA01324.1	AF244890	Glycine max
BA045688.1	AF022459	Glycine max	CA036318.1	AF053127	Malus x domestica
AA045689.1	AF022460	Glycine max	AA03906.1	AF197947	Glycine max
CA070575.1	Y09423	Nepeta racemosa	AA03906.1	AF197946	Glycine max
AA072882.1	AF122821	Capsicum annuum	BA05373.1	AF000391	Oryza sativa
AA045684.1	AF022157	Glycine max	BA04787.1	AF000559	Oryza sativa

CMA73134.1	Y12531	Brassica oleracea	CMA56214.1	X79993	Avena sativa
CMA73133.1	Y12530	Brassica oleracea	CMA5504.1	AJ297917	Lycopersicon esculentum
AAE66615.1	AF142596	Nicotiana tabacum	AAK01710.1	AF328873	Oryza sativa
AAE74722.1	U95318	Lycopersicon esculentum	AAE40579.1	AF216315	Oryza sativa
AAE76214.1	AF220603	Lycopersicon esculentum	CMA50036.1	X70703	Pisum sativum
AAE47424.1	U95317	Lycopersicon pimpinellifolium	CMA58761.1	X83880	Nicotiana tabacum
			AAE65766.1	AF242308	Euphorbia esula
SEQ ID NO. 673			CMA57790.1	AF149424	Ipomoea batatas
CMA56175.1	X79779	Solanum tuberosum	AAE58396.1	X83879	Nicotiana tabacum
CMB62555.1	AJ249962	Daucus carota	AF247136	U94192	Nicotiana tabacum
AAE61251.1	AF267755	Mesembryanthemum crystallinum	BAB18271.1	AB035141	Capsicum annuum
			AAJ224336		Chlamydomonas reinhardtii
SEQ ID NO. 674			CAB37188.1	D61377	Medicago sativa
CMA73214.1	Y12674	Brassica napus	RAA09600.1	AF079318	Nicotiana tabacum
CMA69899.1	Y08607	Nicotiana tabacum	CAC28850.1	Y12785	Triticum aestivum
CMA11862.1	AJ224165	Petunia x hybrida	CMA73323.1	Y12785	Petroselinum crispum
CMA11860.1	AJ224165	Nicotiana tabacum	RAE28617.1	AF129087	Medicago sativa
CMA05329.1	AJ002315	Nicotiana tabacum			
CMA11861.1	AJ224164	Petunia x hybrida	SEQ ID NO. 675		
CMA08564.1	AJ225939	Medicago sativa	RAE24134.1	AF161180	Malus x domestica
CMA05328.1	AJ002314	Nicotiana tabacum	CMA47948.1	X67711	Oryza sativa
CMA58395.1	X83619	Petunia x hybrida	CMA42685.1	X60088	Daucus carota
CMA58394.1	X77763	Nicotiana tabacum	AAE88134.1	AF034618	Spinacia oleracea
CMA54803.1	X83619	Petunia x hybrida	CMA72129.1	X54030	Lycopersicon esculentum
RAA40983.1	AB059621	Oryza sativa	AAE88133.1	AF034617	Cucumis sativus
RAA52214.1	AP001278	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA48474.1	X68411	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA48472.1	X68409	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA48473.1	X68410	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA67554.1	X39100	Trifolium repens	AAE88133.1	AF034616	Spinacia oleracea
CMA73846.1	Y13437	Oryza sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA10288.1	AJ31048	Cicer arietinum	AAE88133.1	AF034616	Spinacia oleracea
CMA72330.1	Y11591	Ricinus communis	AAE88133.1	AF034616	Spinacia oleracea
CMA72291.1	Y11527	Oryza sativa	AAE88133.1	AF034616	Spinacia oleracea
AAE23502.1	AF194415	Oryza sativa	AAE88133.1	AF034616	Spinacia oleracea
AAE25659.1	AF177392	Oryza sativa	AAE88133.1	AF034616	Spinacia oleracea
AAE57721.1	X82270	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
AAE73236.1	AF153061	Pisum sativum	AAE88133.1	AF034616	Spinacia oleracea
AAE41548.1	I07042	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA47099.1	X66469	Medicago sativa	AAE88133.1	AF034616	Spinacia oleracea
CMA13967.1	AJ250311	Oryza sativa	AAE88133.1	AF034616	Spinacia oleracea

CAR64808.1	X95563	Brassica juncea	CAR62225.1	X90692	Medicago sativa
SEQ ID NO. 682			AAH65636.1	IL13653	Lycopersicon esculentum
CAR09881.1	X90693	Trifolium repens	BAH04511.1	DI7587	Oryza sativa
CAR62228.1	X90695	Medicago sativa	BAH01757.1	DI0985	Oryza sativa
AAH41812.1	X36158	Medicago sativa	CAR070817.1	Y09604	Hordeum vulgare
CAR71495.1	X10469	Spinacia oleracea	AAH24263.2	AF141384	Metacaria chamomilla
BAH7387.1	AB024437	Scutellaria baicalensis	CBS1127.1	AF271659	Cicer arietinum
AAH98491.1	X36981	Petroselinum crispum	AAH92216.1	Z68130	Pisum sativum
CAR62226.1	X90693	Medicago sativa	AAH92064.1	U9741	Oryza sativa
CAR64692.1	X742742	Ipomoea batatas	AAH94235.1	AF001653	Oryza sativa
CAR62227.1	X90694	Medicago sativa	AAH92062.1	U9382	Vigna radiata
AAH11481.1	U51191	Glycine max	CBS59202.1	X78878	Hordeum vulgare
CAC21393.1	AA01276	Zea mays	BAB19126.1	AF002839	Oryza sativa
AAH63024.1	N244921	Spinacia oleracea	BAB08188.1	AF002539	Oryza sativa
CAR50597.1	X119023	Lycopersicon esculentum	AAH64227.1	AF248647	Lycopersicon pennellii
CAR50597.1	X119023	Lycopersicon esculentum	AAH64227.1	AF248647	Lycopersicon esculentum
BAH01590.1	D11337	Glycine max	AAH744708.1	AF242849	Hordeum vulgare
AAH11483.1	U51193	Glycine max	CAR70815.1	Y09602	Hordeum vulgare
AAH11482.1	U51192	Glycine max	AAH70816.1	Y09603	Solanum berthaultii
AAH37376.1	AF145350	Glycine max	AAH01264.1	AF006079	Solanum berthaultii
AAH41811.1	X36157	Medicago sativa	AAH01265.1	AF006080	Solanum berthaultii
AAH49818.1	AF004467	Oryza sativa	AAH04510.1	DI7586	Oryza sativa
AAC98519.1	AF007211	Glycine max	AAH22150.1	AF061282	Sorghum bicolor
CAR64616.1	X66125	Oryza sativa	AAH22151.1	AF061282	Sorghum bicolor
CAR60502.1	Z22920	Spirodela polyrrhiza	AAH22164.1	AF061282	Sorghum bicolor
CAR66037.1	X97351	Populus balsamifera subsp. trichocarpa	CBS38996.1	X78876	Hordeum vulgare
AAH7430.1	AF149280	Phaseolus vulgaris	SEQ ID NO. 684		
BAH36643.1	AF002482	Oryza sativa	AFH97311.1	AF008597	Catharanthus roseus
AAH11484.1	U51194	Glycine max	AAC49827.1	U71605	Catharanthus roseus
BAH03911.1	D16442	Oryza sativa	AAC49826.1	U71604	Catharanthus roseus
CAR71490.1	Y10464	Spinacia oleracea			
CAR39486.1	X56013	Triticum aestivum			
AAH63027.1	A2244924	Spinacia oleracea			
AAC49821.1	AFU14470	Oryza sativa			
CAR59485.1	X85228	Triticum aestivum			
AAH66335.1	D30653	Populus kitakamiensis			
CAR59487.1	X85230	Triticum aestivum			
AAH37427.1	AF149277	Phaseolus vulgaris			
CAR62597.1	X91172	Raphanus sativus			

SEQ ID NO. 696	AAK27801.1	AC022457	Oryza sativa
AACT8102.1	AF093630	Oryza sativa	
SEQ ID NO. 697	AAF89209.1	AF279252	Vigna radiata
AAK17070.1	U54770	Pisum sativum	
AAK41777.1	AF212991	Cucurbita maxima	
AAK00946.1	AF318211	Taxus cuspidata	
AAK11616.1	AF326277	Hordeum vulgare	
AAK20011.1	AF216313	Helianthus annuus	
AAK03222.1	AF036772	Triticum aestivum	
AAK45142.1	AF195818	Glycine max	
AAK34533.1	AF195812	Pisum sativum	
AAK44130.1	AF124815	Mentha spicata	
AAK34536.1	AF195817	Beta vulgaris	
AAK34536.1	AF195815	Trifolium repens	
AAK27282.1	AF122821	Capsicum annuum	
AAK34525.1	AF195804	Lens culinaris	
AAK38929.1	AF135484	Glycine max	
AAK94593.1	AF022464	Glycine max	
AAK34527.1	AF195806	Vigna radiata	
AAK70575.1	Y09423	Nepeta racemosa	
AAK34530.1	AF195809	Vigna radiata	
AAK34535.1	AF195814	Trifolium repens	
AAK34532.1	AF195811	Trifolium pratense	
AAK34529.1	AF195808	Vigna radiata	
AAK44151.1	AF124816	Mentha x piperita	
AAK34531.1	AF195810	Trifolium pratense	
AAK76380.1	AF023636	Glycyrrhiza echinata	
AAK45143.1	AF195819	Glycine max	
AAK34528.1	AF195807	Vigna radiata	
AAK94591.1	AF022462	Glycine max	
AAK03223.1	AF037244	Asparagus officinalis	
AAK40324.1	AF037245	Asparagus officinalis	
AAK34534.1	AF195813	Lupinus albus	
AAK56742.1	AU249800	Cicer arietinum	
AAK34526.1	AF195805	Lens culinaris	
SEQ ID NO. 699			
BAR03763.1	DI6247	Nicotiana glauca	
AAF5791.1	AF271892	Pisum sativum	
AAK40306.1	AF156667	Vigna radiata	
CAA68193.1	X99937	Spinacia oleracea	
AAK20980.1	AF079782	Zea mays	
BAR95705.1	AB042644	Oryza sativa	
BAR95704.1	AB042643	Oryza sativa	
AAK48833.1	AC084218	Oryza sativa	
SEQ ID NO. 701			
AAK62580.1	U63298	Pisum sativum	
AAK49655.1	U93707	Lycopersicon esculentum	
SEQ ID NO. 704			
AAK3343.1	IL5390	Zea mays	
BAK13232.1	D07042	Cucurbita pepo	
AAK4984.1	U90262	Zea mays	
BAK12338.1	D84408	Tortula ruralis	
AAK70706.1	U82087	Zea mays	
CAA07481.1	AJ007366	Glycine max	
AAK80692.1	U69173	Vigna radiata	
AAK49405.1	U08140	Glycine max	
BAK85396.1	AF000615	Oryza sativa	
CAA57156.1	X81393	Oryza sativa	
AAK05270.1	AF048691	Oryza sativa	
BAK1749.1	AB017515	Marchantia polymorpha	
BAK1751.1	AB017517	Marchantia polymorpha	
BAK1750.1	AB017516	Marchantia polymorpha	
BAK1751.1	AB017515	Marchantia polymorpha	
CAA57157.1	X81394	Oryza sativa	
CAA57157.1	AF072908	Nicotiana tabacum	
AAK25423.1	AF072908	Nicotiana tabacum	
BAK12715.1	D85039	Zea mays	
CAA65500.1	X96723	Medicago sativa	
AAK69507.1	U28376	Zea mays	
AAK06093.1	U69174	Glycine max	
BAK02698.1	D13436	Oryza sativa	
AAK17800.1	AF030835	Mesembryanthemum crystallinum	
AAK46110.1	AF030835	Oryza sativa	
AAK28192.2	AF115406	Solanum tuberosum	
BAK13440.1	D87707	Ipomoea batatas	
AAK61682.1	L27484	Zea mays	

CH339036.1	X56599	Daucus carota	CH337385.1	Z47076	Malus x domestica
RAK26164.1	A027885	Cucumis sativus	CH307470.1	A007332	Catharanthus roseus
RAK86537.1	A027885	Fragaria x ananassa	CH305491.1	A002485	Medicago sativa
RA21062.1	A216327	Melissa eugliotecta	CH322463.1	Z28627	Acetabularia cliftonii
RA69202.1	Z49233	Chlamydomonas reinhardtii	CH32766.1	X07888	Medicago sativa subsp. x varia
RA23900.1	AF194413	Oryza sativa	CH38856.1	AF156101	Chlamydomonas reinhardtii
RA23901.2	AF194414	Oryza sativa	CH307803.1	Z39768	Nicotiana tabacum
RAK78558.1	AF030879	Solanum tuberosum	CH388254.1	Z48221	Phaseolus vulgaris
CSB46228.1	X18055	Arachis hypogaea	AAA33545.1	M60215	Zea mays
RAK32116.1	AF051211	Picea mariana	BAA32244.1	AB038648	Vicia faba
CAA56750.1	X83869	Daucus carota	CH307804.1	Z39769	Nicotiana tabacum
BAA12691.1	D84507	Zea mays	CAA05493.1	AJ002487	Medicago sativa
BAA7181.1	S82324	Zea mays	CAA52264.1	Z28632	Acetabularia cliftonii
BAA22410.1	D38452	Zea mays	CAA45119.1	X63558	Brassica oleracea
BAA12692.1	D84508	Zea mays	CAA05492.1	AJ002486	Medicago sativa
RAK01179.1	AF289237	Zea mays	AAA74625.1	U31773	Oryza sativa
RAK24961.1	AF009337	Tradescantia virginiana	CH307805.1	Z39770	Nicotiana tabacum
RAK90814.1	AF001168	Oryza sativa	CAA05494.1	AJ002488	Medicago sativa
RAK49008.1	U24168	Lilium longiflorum	CAA40686.1	X57438	Brassica napus
RAK19403.1	AF203481	Lycopersicon esculentum	CH337386.1	Z47077	Malus x domestica
SEQ ID NO. 705			CH337387.1	Z47078	Malus x domestica
BRN02697.1	A80339916	Vicia faba	BAA32334.1	AB038787	Vicia faba
CAC1129.1	A2298829	Fagus sylvatica	CAC11128.1	AJ298828	Fagus sylvatica
RAK09953.1	AF107464	Hevea brasiliensis	BAA32335.1	AB038788	Vicia faba
RAK26958.1	A0039917	Vicia faba	CH305774.1	AJ298966	Fagus sylvatica
RAK72838.1	AF097182	Oryza sativa	BAA32337.1	AB038790	Vicia faba
RAK41126.1	AF159061	Oryza sativa subsp. indica	BAA32336.1	AB038789	Vicia faba
AAA91806.1	U49113	Oryza sativa	BAA32338.1	AB038791	Vicia faba
CAA81126.1	Z26041	Helianthus annuus	AAK29592.1	AF196285	Medicago sativa subsp. x varia
CH307806.1	Z33771	Nicotiana tabacum	SEQ ID NO. 706		
RAK48068.1	AF173881	Oryza sativa subsp. indica	CAA10104.1	AJ012656	Prunus persica
RAK22116.1	AF134552	Oryza sativa subsp. indica	CAA10103.1	AJ012655	Prunus persica
CH346506.1	AJ007496	Nicotiana tabacum	CAA10102.1	AJ012654	Prunus persica
CH307807.1	Z33772	Nicotiana tabacum	CAA10101.1	AJ012653	Prunus persica
CAA06887.1	X57439	Brassica napus	CAA04565.1	AJ001161	Hordeum vulgare
CAA49849.1	X70399	Medicago sativa	CAA57636.1	X82124	Zea mays
BAA32699.1	AB039918	Vicia faba	SEQ ID NO. 710		
CH307471.1	AJ007333	Catharanthus roseus	AF17236.1	AF178976	Zea mays
RAK6353.1	AF283668	Oryza sativa subsp. indica	AAK26856.1	AF069952	Enteromorpha intestinalis
CH301395.1	Z26654	Acetabularia cliftonii			

SEQ ID NO. 711	Oryza sativa	AAK27686.1	AF347614	Lycopersicon esculentum
AP001633	Oryza sativa	AAK41419.1	AF309643	Solanum tuberosum
AP001633	Oryza sativa	AAK27687.1	AF347613	Lycopersicon esculentum
AP001633	Oryza sativa	AAK57952.1	U52867	Hordeum vulgare
AP001633	Oryza sativa	CAA57711.1	X82256	Stylosanthes hamata
AP001633	Oryza sativa	CAA55291.1	X96431	Hordeum vulgare
AP001633	Oryza sativa	CAA57710.1	X82255	Stylosanthes hamata
AP001633	Brassica napus	CAF35215.1	AF355602	Zea mays
AP001633	Brassica napus	CAF65536.1	X96761	Sporobolus stapifianus
AP001633	Brassica napus	CAF7831.1	X82454	Stylosanthes hamata
AP002899	Oryza sativa	CAF11413.1	AJ223495	Brassica juncea
AP002899	Oryza sativa	AAK94543.1	AF016306	Zea mays
SEQ ID NO. 712	Lactuca sativa	SEQ ID NO. 718		
U31462	Lactuca sativa	RAC25922.1	U78947	Malus x domestica
U31462	Lactuca sativa	RAD51422.1	U78949	Malus x domestica
U31462	Nicotiana glauca	RAF13262.1	AF198176	Dendrobium gress Madame Thong-In
U34817	Nicotiana glauca	RAF13260.1	AF198174	Dendrobium gress Madame Thong-In
AF288196	Oryza sativa subsp. indica	AAK50187.1	U49734	Sorghum bicolor
SEQ ID NO. 713	Lycopersicon esculentum	SEQ ID NO. 719		
U64789	Lycopersicon esculentum	AAA91063.1	N88254	Hevea brasiliensis
SEQ ID NO. 715	Citrus unshiu	SEQ ID NO. 723		
AB011796	Eustoma grandiflorum	CAC33000.1	AJ272523	Solanum tuberosum
AF240764	Petunia x hybrida	CAC33003.1	AJ272526	Solanum tuberosum
U22543	Solanum tuberosum	CAC33002.1	AJ272525	Solanum tuberosum
U22543	Solanum tuberosum	CAC33001.1	AJ272524	Solanum tuberosum
AF119095	Malus x domestica	CAC32959.1	AJ272522	Solanum tuberosum
AF119095	Malus x domestica	RAD44338.1	AF160197	Glycine max
SEQ ID NO. 716	Dianthus caryophyllus	SEQ ID NO. 724		
AF339732	Zea mays	RAD18052.1	AF124161	Nicotiana plumbaginifolia
AB042268	Zea mays	RAD18053.1	AF124162	Nicotiana plumbaginifolia
AB042267	Zea mays	SEQ ID NO. 729		
AB042261	Zea mays	CAA48155.1	X68017	Capsicum annuum
AB031012	Zea mays	RAF33237.1	AE220218	Citrus unshiu
AB024291	Zea mays	BAB18514.1	AB037975	Citrus unshiu
AB042260	Zea mays	CAC27383.1	AJ308385	Helianthus annuus
AB004882	Zea mays	CAC19567.1	AJ304825	Helianthus annuus
AB031011	Zea mays			
AB042269	Zea mays			
AB060130	Zea mays			
SEQ ID NO. 717				

[illegible]

[illegible]

SEQ ID NO. 748	Plastid <i>Oryza sativa</i>	Brassica oleracea
CAA33924.1	U15901	LYCopersicon esculentum
SEQ ID NO. 749	Petunia x hybrida	Triticum aestivum
RAA13389.1	AF088912	Pisum sativum
RAA32144.1	AF051244	Spinacia oleracea
RAA32112.1	AF051207	Cicer arietinum
RAA67144.1	AF230646	LYCopersicon esculentum
CMA46490.1	AJ001346	Medicago sativa subsp. x varia
CMA70083.1	Y08559	Zea mays
AA86368.1	U21746	
SEQ ID NO. 750	Zea mays	Pisum sativum
RAA97381.1	AF111029	Capsicum annuum
CAA58669.1	X83694	Capsicum annuum
BA78586.1	A0066514	LYCopersicon esculentum
SEQ ID NO. 751	Pisum sativum	Physcomitrella patens
AA86952.1	U10046	Capsicum annuum
AA86950.1	U10044	Oryza sativa
CAA50035.1	X70702	Solanum tuberosum
AA86951.1	U10045	Solanum tuberosum
RAA96367.1	AB043975	Solanum tuberosum
CA857298.1	X30162	Oryza sativa
CA848289.1	X68202	Oryza sativa
AA86949.1	U10043	Triticum aestivum
SEQ ID NO. 752	Prunus armeniaca	Bidens pilosa
RAA97143.1	U93168	Capsicum annuum
RAA84136.1	AF101423	Chlamydomonas reinhardtii
CA864626.1	X95314	Prunus avium
SEQ ID NO. 753	Pisum sativum	Oryza sativa
AA57159.1	L27107	Pisum sativum
AA86953.1	U10047	Petunia x hybrida
SEQ ID NO. 754	Oryza sativa	Petunia x hybrida
BA821002.1	AB054123	Oryza sativa
SEQ ID NO. 756		Malus x domestica
		Lilium longiflorum
		Daucus carota
		Brassica napus
		Brassica napus

AAA87347.1	M88307	Brassica juncea	BR05523.1	D26574	Daucus carota
AAAG27432.1	A2295637	Elaeis guineensis	AAH37698.1	AF145729	Oryza sativa
BR049697.1	A8041712	Chara corallina	BR049697.1	AB028073	Physcomitrella patens
BR049696.1	A8041711	Chara corallina	BR049696.1	AB028079	Physcomitrella patens
BR049695.1	A8041710	Chara corallina	BR049695.1	AB028080	Physcomitrella patens
AAAC18355.1	AF064456	Oryza sativa subsp. indica	BR049694.1	AB028072	Physcomitrella patens
AAA34237.1	L20691	Vigna radiata	BR049693.1	AF145730	Oryza sativa
CMA52602.1	X74490	Zea mays	CMA52602.1	AF005820	Craterostigma plantagineum
CMA54583.1	X77397	Zea mays	CMA54583.1	AB028075	Craterostigma plantagineum
AAAC49585.1	U49103	Triticum aestivum	AAAC49585.1	X96681	Oryza sativa
AAAC49586.1	U49104	Triticum aestivum	AAAC49586.1	AF211193	Oryza sativa
AAAC49587.1	U49105	Triticum aestivum	AAAC49587.1	AC079890	Oryza sativa
AAAC49588.1	U48669	Triticum aestivum	AAAC49588.1	AF005633	Craterostigma plantagineum
AAAC49589.1	U48693	Triticum aestivum	AAAC49589.1	AF145727	Oryza sativa
SEQ ID NO. 760			SEQ ID NO. 765		
BR06405.1	D30744	Zea mays	BR06405.1	AB001389	Oryza sativa
CMC20908.1	AJ131825	Scheffelia dubia	CMC20908.1	AJ132337	Picea abies
SEQ ID NO. 761			CMC20909.1	AB009086	Chlamydomonas sp. W80
CMB60277.1	AJ002586	Solanum tuberosum	CMB60277.1	AJ022784	Hordeum vulgare
CMA72107.1	Y11220	Solanum tuberosum	CMA72107.1	Y11220	
BR049697.1	AB024733	Symplocarpus renifolius	BR049697.1	X14020	Pisum sativum
BR049698.1	AB049998	Oryza sativa	BR049698.1	M87839	Nicotiana tabacum
BR049699.1	AB049999	Symplocarpus renifolius	BR049699.1	M87838	Nicotiana tabacum
BR049700.1	AB042429	Triticum aestivum	BR049700.1	M58522	Spinacia oleracea
BR049701.1	AB042428	Triticum aestivum	BR049701.1	M58522	
BR049702.1	AB042427	Oryza sativa	BR049702.1	M58522	
SEQ ID NO. 762			SEQ ID NO. 767		
AAAF01764.2	AF184277	Glycine max	AAAF01764.2	U23784	Nicotiana glutinosa
BR021017.1	D26578	Daucus carota	BR021017.1	AB043976	Panax ginseng
BR021018.1	AF145728	Oryza sativa	BR021018.1	AF237624	Perilla frutescens
CB071118.1	Y17306	Lycopersicon esculentum	CB071118.1	AF051232	Picea mariana
BR050524.1	AF184278	Glycine max	BR050524.1	X66413	Chlamydomonas reinhardtii
BR050525.1	D26575	Daucus carota	BR050525.1	AJ066500	Chlamydomonas sp. HS-5
BR050526.1	AB028078	Physcomitrella patens	BR050526.1	D67043	Oryza sativa
BR050527.1	AB028077	Physcomitrella patens	BR050527.1	X63428	Panicum miliaceum
BR050528.1	AB028076	Physcomitrella patens	BR050528.1	D25323	Panicum miliaceum
BR050529.1	D26573	Daucus carota	BR050529.1	L40579	Glycine max
BR050530.1	D26576	Daucus carota	BR050530.1	X63430	Panicum miliaceum

CAA45023.1	X53429	Panicum miliaceum	CAA70894.1	Y09747	Zea mays
AAA33134.1	M92660	Daucus carota	CAA70895.1	Y09748	Hordeum vulgare
BAA04992.1	D25322	Panicum miliaceum	CAA70896.1	Y09749	Vicia faba
CAA43779.1	K15177	Medicago sativa	CAA70899.1	Y09752	Secale cereale
AAB46610.1	L25334	Medicago sativa	CAA70900.1	Y09753	Secale cereale
AAA33408.1	M92094	Lupinus angustifolius	CAA70897.1	Y09750	Plantago major
AAA50160.1	L23875	Lupinus angustifolius	AAF33669.1	AF079871	Nicotiana tabacum
CAA33504.1	D14673	Oryza sativa	AAF33670.1	AF079872	Nicotiana tabacum
CAA33894.1	X94184	Lotus japonicus	SEQ ID NO. 772		
AAC50014.1	AF034210	Glycine max	SEQ ID NO. 773		
AAA50015.1	AF034210	Glycine max	AAA33959.1	AF145976	Plum sativum
AAB46611.1	L25335	Medicago sativa	SEQ ID NO. 774		
AAA33942.1	L09702	Glycine max	CAA98183.1	Z73955	Lotus japonicus
ABE26677.2	S60967	Chloroplast Glycine max	CAA54506.1	Z73301	Glycine max
ACC12674.1	AF029898	Lotus corniculatus	RAA02108.1	D12540	Plum sativum
CAA42430.1	X59761	Lupinus angustifolius	RAA08018.1	AF165095	Gossypium hirsutum
RAA08106.1	D45076	Panicum miliaceum	CAA98186.1	Z73958	Lotus japonicus
ABE26896.1	U89494	Canavalia lineata	RAA8019.1	AF165096	Gossypium hirsutum
CAA01697.1	A001360	Plastid Canavalia lineata	RAA47558.1	U87143	Mesembryanthemum crystallinum
BAA23814.1	D67042	Oryza sativa	CAA54507.1	Z77302	Glycine max
SEQ ID NO. 770			RAA02114.1	D12546	Plum sativum
CAB62555.1	AJ249962	Daucus carota	CAA98181.1	Z73953	Lotus japonicus
CAA68912.1	Y07632	Zea mays	BAA02113.1	D12545	Plum sativum
CAA65254.1	X96390	Lycopersicon esculentum	RAA06701.1	D13905	Zea mays
CAA56175.1	X79779	Solanum tuberosum	BAA02904.1	D13758	Oryza sativa
AAF36832.1	AF207745	Triticum aestivum	AAK15703.1	AF327517	Oryza sativa
CAB54856.1	AJ132686	Zea mays	AAK97114.1	U58853	Glycine max
AAI16278.1	AF095095	Samanea saman	CAA98180.1	Z73952	Lotus japonicus
CAA71598.1	Y10579	Vicia faba	CAA98049.1	Z49190	Beta vulgaris
CAC05489.1	AJ271447	Populus tremula x Populus tremuloides	CAA98177.1	Z73949	Lotus japonicus
BA96150.1	AF002092	Oryza sativa	RAA02112.1	D12544	Plum sativum
RAA96192.1	AF002093	Oryza sativa	BAA02437.1	D13152	Oryza sativa
BA84085.1	A8032074	Nicotiana paniculata	CAA98179.1	Z73951	Lotus japonicus
CAI12645.1	AJ225805	Egeria densa	RAA02110.1	D12542	Plum sativum
AD39492.1	AF145272	Samanea saman	RAA02111.1	D12543	Plum sativum
CAC10514.1	A2299013	Samanea saman	CAA1966.1	X59276	Oryza sativa
CAC05488.1	AJ271446	Populus tremula x Populus tremuloides	CAA98184.1	Z73956	Lotus japonicus
AAF61251.1	AF267755	Mesembryanthemum crystallinum	CAA55865.1	X79278	Mangifera indica
			BAA02109.1	D12541	Plum sativum

280

RA011483.1	U51193	Glycine max	AAA38784.1	U72154	Brassica nigra
RA011484.1	U51194	Glycine max	AA030635.1	AF149311	Rauwolfia serpentina
AA067737.1	L77080	Sycosanthes humilis	BA011831.1	D83177	Costus speciosus
CA062226.1	X90693	Medicago sativa	AA034650.1	AF221526	Prunus serotina
RA037429.2	AF149279	Phaseolus vulgaris	AA041166.1	U39228	Prunus avium
BA082307.1	AE027753	Nicotiana tabacum	CA064444.1	X94986	Manihot esculenta
RA037375.1	AF145349	Glycine max	AA022162.1	S35175	Manihot esculenta
CA094692.1	AJ242742	Ipomoea batatas	AA040007.1	AF163097	Dalbergia cochinchinensis
RA037427.1	AF149277	Phaseolus vulgaris	AA028800.1	AF112888	Catharanthus roseus
RA037430.1	AF149280	Phaseolus vulgaris	BA078708.1	AF003089	Polygonum tinctorium
BA092500.1	AF001383	Oryza sativa	AA025897.1	AF170087	Cucurbita pepo
CA071492.1	Y10466	Spinacia oleracea	AA069619.1	AF072736	Pinus contorta
CA067121.1	Y19023	Lycopersicon esculentum	AA071381.1	U95298	Manihot esculenta
CA050597.1	X71593	Lycopersicon esculentum	AA09850.1	U44087	Zea mays
BA097734.1	AF014502	Glycine max	CA052293.1	X74217	Zea mays
CA071494.1	Y10468	Spinacia oleracea	AA010503.1	U33816	Zea mays
CA021391.1	AJ401274	Spinacia oleracea	AA065946.1	U25157	Zea mays
BA041911.1	F36357	Medicago sativa	AA003266.1	U44773	Zea mays
CA098519.1	AF007211	Glycine max	CA040057.1	X56733	Trifolium repens
AA063027.1	AF244824	Spinacia oleracea	AA028339.1	AF082991	Avena sativa
CA062615.1	X91232	Mercurialis annua	CA040058.1	X56734	Trifolium repens
CA062227.1	X90694	Medicago sativa	AA049177.1	U33817	Sorghum bicolor
BA094962.1	AE042103	Asparagus officinalis	CA055196.1	X78433	Avena sativa
CA066037.1	X97351	Populus balsamifera subsp. trichocarpa	AA060614.1	AF293849	Secale cereale
BA01950.1	D11337	Vigna angularis	AA007429.1	AF293849	Musa acuminata
CA062597.1	X91172	Raphanus sativus	AA087339.1	AF321287	Hordeum vulgare
AA049820.1	AF014469	Oryza sativa	AA087339.1	L41869	Brassica napus
BA090365.1	AF001081	Oryza sativa	CA079989.2	Z21977	Cicer arietinum
AA065464.2	AF247700	Oryza sativa	CA080209.1	AU005950	Oryza sativa
BA09584.1	AF001073	Oryza sativa	AA04906.1	U28047	
CA090881.1	AJ0011939	Trifolium repens	SEQ ID NO. 786		
SEQ ID NO. 784			BA013232.1	D67042	Zea mays
RA025300.1	AF088276	Lycopersicon esculentum	BA012338.1	D84408	Zea mays
CA063704.1	X93301	Oryza sativa	AA049984.1	U90262	Cucurbita pepo
RA024966.1	AF109150	Oryza sativa	CA070706.1	AJ007366	Zea mays
AA025225.1	AF088279	Lycopersicon esculentum	AA080692.1	U82087	Tortula ruralis
SEQ ID NO. 785			AA080692.1	U69173	Glycine max
CA057913.1	X82577	Potamogeton crispus	AA049408.1	U08140	Vigna radiata
			BA01749.1	AB017515	Marchantia polymorpha
			BA01751.1	AB01751.1	Marchantia polymorpha
			BA01750.1	AB017516	Marchantia polymorpha

281

BA081748.1	AB017515	Marchantia polymorpha	MAF33823.1	AF223351	Nicotiana tabacum
BA033443.1	U15390	Zea mays	CAH7546.1	Y13253	Pisum sativum
CA057156.1	X81593	Oryza sativa	BA03893.1	X94183	Solanum tuberosum
BA05396.1	AF000615	Oryza sativa	BA03258.1	U01474	Glycine max
BA05270.1	AF048691	Oryza sativa	AA07444.1	U25027	Glycine max
BA061682.1	L27484	Zea mays	CA05127.1	X95877	Nicotiana rustica
BA052423.1	AF072908	Nicotiana tabacum	CA05681.1	Y11931	Nicotiana rustica
BA046110.1	AF073166	Oryza sativa	CA05377.1	X93564	Solanum tuberosum
BA02698.1	D13436	Ipomoea batatas	AA026119.1	AF108123	Brassica napus
BA013440.1	D87707	Glycine max	BA03259.1	U01475	Glycine max
BA080693.1	U69174	Glycine max	BA03257.1	U01475	Glycine max
AA017800.1	AF090835	Mesembryanthemum crystallinum	AA041107.1	U85250	Vigna unguiculata
CA065500.1	X96723	Medicago sativa	CA013988.1	AJ291467	Digitaria sanguinalis
BA0157.1	X81394	Oryza sativa	MA01711.1	AF332874	Oryza sativa
CA039936.1	X56599	Daucus carota	SEQ ID NO. 788		
BA01715.1	D85039	Zea mays	AF34428.1	AF172282	Oryza sativa
BA059507.1	U28376	Zea mays	BA04516.1	AF001800	Oryza sativa
BA028192.2	AF115406	Solanum tuberosum	BA094517.1	AF001800	Oryza sativa
BA026164.1	AY027885	Cucumis sativus	BA03542.1	U20948	Ipomoea trifida
BA021062.1	AF216527	Dunaliella tertiolecta	BA03429.2	AF001800	Oryza sativa
BA068537.1	AF035944	Fragaria x ananassa	BA03315.1	L27821	Oryza sativa
CA089202.1	Z49233	Chlamydomonas eugametos	CA073133.1	Y12530	Brassica oleracea
BA023900.1	AF194413	Oryza sativa	CA057145.1	X98520	Brassica oleracea
BA023901.2	AF194414	Oryza sativa	BA023676.1	AF000970	Brassica rapa
BA078556.1	AF030879	Solanum tuberosum	AA033008.1	M97667	Brassica napus
AC021116.1	AF051211	Picea mariana	BA089179.1	AJ245479	Brassica napus subsp. napus
CA064228.1	Y18055	Arachis hypogaea	BA092836.1	AF032473	Brassica oleracea
CA058750.1	X83869	Daucus carota	BA07576.1	D38563	Brassica rapa
BA047181.1	S82324	Zea mays	BA07577.2	D38564	Brassica rapa
BA022410.1	D38452	Zea mays	BA07577.2	D38564	Brassica rapa
BA012692.1	D84508	Zea mays	AA033000.1	M76647	Brassica oleracea
AA001179.1	AF289237	Zea mays	BA092954.1	AF001551	Oryza sativa
BA024961.1	AF009337	Tradescantia virginiana	BA06285.1	D30049	Brassica rapa
BA090814.1	AF001168	Oryza sativa	BA021132.1	D88193	Brassica rapa
CA049008.1	U24188	Lilium longiflorum	AA02232.1	U00443	Brassica napus
BA021450.1	U38446	Nicotiana tabacum	CA07962.1	X67733	Zea mays
			CA079355.1	Z18921	Brassica oleracea
			BA021001.1	AF054061	Brassica rapa
			CA041878.1	Y18260	Brassica oleracea
			AA046420.1	AF100771	Hordeum vulgare
SEQ ID NO. 787					
CA063954.1	X94289	Solanum tuberosum			
BA033824.1	AF223573	Nicotiana tabacum			

AAF73998.2	AF144505	Cathaya argyrophylla	CAB09419.1	AJ010842	Lycopersicon esculentum
AAH06665.1	AF150687	Solanum tuberosum	CAB06079.1	Z83829	Picea abies
AAF73996.2	AF144503	Pinus armandii	RAB19862.1	AB052883	Oryza sativa
CMA49575.1	X69954	Glycine max	BAR55398.1	AF000615	Oryza sativa
AAF74004.2	AF144511	Pseudotsuga sinensis	BAR55054.1	AF173655	Beta vulgaris
AAF74016.2	AF144523	Nothotsuga longibracteata	CAB52688.1	AJ132223	Lycopersicon esculentum
AAF74001.2	AF144508	Pseudotsuga menziesii	CAB52690.1	AJ132225	Lycopersicon esculentum
AAF74002.2	AF144509	Pseudotsuga sinensis	SEQ ID NO. 796		
AAF74019.2	AF144526	Tsuga canadensis	CMA58994.1	X84208	Sinapis alba
AAF74018.2	AF144520	Tsuga canadensis	CMA76116.1	V16190	Sinapis alba
AAF74003.2	AF144510	Pseudotsuga sinensis	SEQ ID NO. 799		
RAF73999.2	AF144529	Pseudotsuga menziesii	AAB61708.1	U93048	Daucus carota
RAF74022.2	AF144506	Cedrus atlantica	AAG52992.1	U77888	Ipomoea nil
RAF73993.2	AF144500	Pinus banksiana	RAB84787.1	A3000559	Oryza sativa
RAF73992.1	AF144499	Pinus banksiana	CAC20842.1	AJ250467	Pinus sylvestris
RAF74007.2	AF144514	Abies firma	RAB36558.1	U77888	Ipomoea nil
RAB64913.1	U23787	Sorghum bicolor	RAK21965.1	AY028699	Brassica napus
CAB97359.1	AJ278455	Juglans nigra	CAG61510.1	X89226	Oryza sativa
AAF74000.2	AF144507	Pseudotsuga menziesii	RAF59306.1	AF197947	Glycine max
SEQ ID NO. 791			RAF59305.1	AF197946	Glycine max
AAB09756.1	U31097	Glycine max	AC073090.1	AF073405	Oryza sativa
SEQ ID NO. 795			AAC36318.1	AF053127	Malus x domestica
RAF43998.1	AF215837	Apium graveolens var. dulce	AAA33915.1	L27821	Oryza sativa
CMA47324.1	X66856	Nicotiana tabacum	RAF00510.1	AF285172	Phaseolus vulgaris
AAB06594.1	U38651	Medicago truncatula	RAF34426.1	AF172282	Oryza sativa
RAB19864.1	AB052885	Oryza sativa	AAD1872.1	AF078082	Phaseolus vulgaris
CMA53192.1	X75440	Chlorella kessleri	BAK52994.1	U77888	Ipomoea nil
RAF74565.1	AF215851	Spinacia oleracea	BAK52954.1	AF001551	Oryza sativa
CAB6813.1	Y07520	Chlorella kessleri	RAF16628.1	AY007545	Brassica napus
CA04511.1	AJ001061	Vicia vinifera	BAK49509.1	AB041503	Populus nigra
CAB07812.1	Z93775	Vicia faba	BAK49510.1	AB041504	Populus nigra
CMA39036.1	X55349	Chlorella kessleri	RAF34428.1	AF172282	Oryza sativa
RAF74567.1	AF215853	Solanum tuberosum	BAK34529.2	AF001800	Oryza sativa
RAF74566.1	AF215852	Nicotiana tabacum	RAF27255.1	U72725	Oryza longistaminata
RAF74568.1	AF215854	Zea mays	BAK93834.1	U82481	Zea mays
RAF70761.1	I08196	Ricinus communis	SEQ ID NO. 800		
RAB19863.1	AB052884	Oryza sativa	CAB38030.1	AJ010201	Glycine max
CAB52689.1	AJ132224	Lycopersicon esculentum			
CMA70777.1	Y09590	Vitis vinifera			

AA19381.1	AF068844	Prunus persica	BA20365.1	AB004307	Nicotiana tabacum
SEQ ID NO. 801			BA07479.1	D38445	Oryza sativa
CB38030.1	AJ010201	Glycine max	BA02248.1	D12815	Oryza sativa
AA19381.1	AF068844	Prunus persica	BA04232.1	D17410	Oryza sativa
			BA06042.1	AF001129	Oryza sativa
			BA05425.1	AF000616	Oryza sativa
			BA04616.1	D17790	Oryza sativa
SEQ ID NO. 802			BA040034.1	U10418	Zea mays
CA070968.1	Y09825	Solanum tuberosum	CA067796.1	X99419	Pisum sativum
AD16013.1	AF080542	Nepenthes alata	AAK09367.1	AF321525	Pisum sativum
CA070574	AJ007574	Ricinus communis	AAK09370.1	AF321528	Pisum sativum
CA010608.1	AJ132228	Ricinus communis	AAK09369.1	AF321527	Pisum sativum
CA070778.1	Y09591	Vicia faba	AAK09368.1	AF321526	Pisum sativum
CA070969.1	Y09826	Solanum tuberosum			
AD16014.1	AF080543	Nepenthes alata			
CA072006.1	Y11121	Ricinus communis	SEQ ID NO. 804		
AD16015.1	AF080544	Nepenthes alata	BA082107.1	AB022693	Nicotiana tabacum
AF15944.1	AF061434	Vicia faba	AAC31956.1	AF080595	Pimpinella brachycarpa
CA092992.1	Z68759	Ricinus communis	AAC49527.1	U48831	Petroselinum crispum
AF15945.1	AF061435	Vicia faba	AAD55974.1	AF121353	Petroselinum crispum
AF15946.1	AF061436	Vicia faba	BA077383.1	AB020590	Nicotiana tabacum
BA096830.1	U64823	Nicotiana sylvestris	CA08326.1	Z48429	Avena fatua
BA089844.1	U31932	Nicotiana sylvestris	BA086031.1	AB026890	Nicotiana tabacum
BA093437.1	AJ022783	Oryza sativa	AD16139.1	AF096299	Nicotiana tabacum
CB382595.1	AJ238635	Chlorella protothecoides	AA037515.1	I44134	Cucumis sativus
			AA023896.1	AF193802	Oryza sativa
SEQ ID NO. 803			AA049529.1	U58540	Petroselinum crispum
CA031210.1	Z26251	Helianthus tuberosus	AD16138.1	AF096298	Nicotiana tabacum
AA020721.1	U58629	Helianthus tuberosus	CA049528.1	U56834	Petroselinum crispum
CA027143.1	AJ132538	Abies abies	BA016432.1	AB041520	Nicotiana tabacum
AA079131.1	U10545	Chlamydomonas reinhardtii	BA077358.1	AB020023	Nicotiana tabacum
CA05406.1	U78851	Chlamydomonas reinhardtii	CA088331.1	Z48431	Avena fatua
BA040978.1	U22328	Volvox carterii	AA035658.1	AF204925	Petroselinum crispum
AA033029.1	M25528	Mesembryanthemum crystallinum	AD161591.1	AF121354	Petroselinum crispum
CA030978.1	X12446	Pisum sativum	AA035659.1	AF204926	Petroselinum crispum
BA013417.1	D67547	Oryza sativa	CA066338.1	AJ279697	Betula pendula
AA021758.1	U14956	Vicia faba	AA01864.1	AF193771	Nicotiana tabacum
AA034029.1	M86349	Spinacia oleracea	AA01863.1	AF193770	Nicotiana tabacum
CA071293.1	AJ250378	Capsicum annuum	SEQ ID NO. 806		
CA074359.1	Y14032	Nicotiana tabacum	CB052689.1	AJ132224	Lycopersicon esculentum
BA088236.1	AB035644	Zea mays	CA09419.1	AJ010942	Lycopersicon esculentum
BA088237.1	AB035645	Zea mays			

CAB060709.1	283829	Picea abies	AB022008.1	AF290201	Solanum chacoense
BAB19864.1	X68585	Oryza sativa	AB09274.1	I77969	Spinacia oleracea
CBA47324.1	X68586	Nicotiana tabacum	CAB07763.1	293764	Picea abies
AAA79857.1	L08188	Ricinus communis	AA068701.1	I26538	Mesembryanthemum crystallinum
AAA79761.1	L08196	Ricinus communis	AA068701.1	I26538	Brassica oleracea
CBA04511.1	A3001061	Vitis vinifera	AA023179.1	AF299050	Raphanus sativus
AA06594.1	I38651	Medicago truncatula	BAA92238.1	AB030695	Brassica oleracea
CBA70777.1	X09590	Vitis vinifera	AA023180.1	AF299051	Brassica rapa
BAB19863.1	AB052884	Oryza sativa	AA061378.1	AF004293	Raphanus sativus
BBA83554.1	AF000399	Oryza sativa	BAA92239.1	AB030696	Vicia faba
CBA53192.1	X75440	Chlorella kessleri	CAB093959.1	AF289701	Mesembryanthemum crystallinum
CBA68813.1	X07520	Chlorella kessleri	AB09757.1	I26537	Raphanus sativus
CBA33036.1	X55349	Chlorella kessleri	BBA32777.1	AB012044	
BAB19862.1	AB052883	Oryza sativa	SEQ ID NO. 808		
CAB52690.1	AJ132225	Lycopersicon esculentum	AAK21965.1	AY028699	Brassica napus
CAB52689.1	AJ132225	Lycopersicon esculentum	BAA92836.1	AB032473	Brassica oleracea
CAB55054.1	AF173655	Beta vulgaris	AB061708.1	U93048	Daucus carota
AA043996.1	AF215837	Spinacia oleracea	BAA23676.1	AB000970	Brassica rapa
AA074565.1	AF215851	Spinacia oleracea	AA021872.1	AF078082	Phaseolus vulgaris
AA074568.1	AF215854	Zea mays	CBA41878.1	Y18259	Brassica oleracea
AA074567.1	AF215853	Solanum tuberosum	AA062232.1	U00443	Brassica napus
AA074566.1	AF215852	Nicotiana tabacum	AA033000.1	M76647	Brassica oleracea
AA037424.1	AF149282	Phaseolus vulgaris	CBA41879.1	Y18260	Brassica oleracea
AA045934.1	AF149282	Betula pendula	CBA73134.1	Y12531	Brassica oleracea
			BAA06285.1	D30049	Brassica rapa
			BAA21132.1	D89193	Brassica rapa
			CAB89179.1	AJ245479	Brassica napus subsp. napus
			AAA33008.1	M97667	Brassica napus
			CBA67145.1	X98520	Brassica oleracea
			CBA73133.1	Y12530	Brassica oleracea
			AA066615.1	AF142596	Nicotiana tabacum
			AA076314.1	AF220603	Lycopersicon esculentum
			AAK15668.1	AF318492	Lycopersicon hirsutum
			CA074662.1	Y14286	Brassica oleracea
			BAA47424.1	U59317	Lycopersicon pimpinellifolium
			BAA47422.1	U59318	Lycopersicon esculentum
			BA076307.1	AF220602	Lycopersicon pimpinellifolium
			BA07576.1	D38563	Brassica rapa
			BA076628.1	AY007545	Brassica napus
			CBA76964.1	Z73295	Catharantus roseus
			CBA79535.1	Z18921	Brassica oleracea

AA051109.1	AF176040	Mesembryanthemum crystallinum	CAA04942.1	AJ001706	Pinus sylvestris
AA073016.1	AF262934	Avicennia marina	CAA06030.1	AJ003783	Marsilea quadrifolia
AA042541.1	AF091621	Catharanthus roseus	CAA53116.1	X78307	Craterostigma plantaginum
BA040310.1	AB026055	Nicotiana tabacum	AAA33352.1	I26924	Ginkgo biloba
AAA34310.1	M62720	Triticum aestivum	CAA39974.1	AJ133422	Nicotiana tabacum
BA040311.1	AB026056	Nicotiana tabacum	CAA42901.1	X60343	Hordeum vulgare
AA02168.1	U15971	Oryza sativa	AAA87680.1	U45858	Zea mays
CAA58111.1	X82938	Lycopersicon esculentum	AAA87578.1	U45855	Zea mays
AAA86089.1	U17250	Brassica oleracea	CAA51676.1	X73151	Zea mays
AF000427	LYCOPERSICON	Lycopersicon esculentum	AAA33779.1	U7501	Pinus sylvestris
AA023847.1	AF001081	Oryza sativa	AAA59010.1	U96623	Selaginella lepidophylla
BA030392.1	AF0165420	Mesembryanthemum crystallinum	CAA42902.1	X60344	Petroselinum crispum
AA022820.1	AF032469	Zea mays	CAA42905.1	X60347	Magnolia liliiflora
AA050772.1	AJ0002959	Prunus armeniaca	CAA51071.1	X72381	Physcomitrella patens
BA063513.1	AF0008910	Oryza sativa	AAA82047.1	U31676	Oryza sativa
BA021006.1	D17786	Pseudotsuga menziesii	AAA33033.1	X05223	Mesembryanthemum crystallinum
CAA10494.1	AJ131733		CAA33031.1	M29956	Mesembryanthemum crystallinum
SEQ ID NO. 821			CAA51675.1	X73150	Pisum sativum
AA04624.1	AF098672	Brassica oleracea	AAA33667.1	U7500	Pisum sativum
AA086615.1	AF034944	Zea mays	CAA42903.1	X60345	Ranunculus acris
AA057556.1	AF094774	Oryza sativa	AAA34077.1	M14119	Nicotiana tabacum
AA051599.1	AF091857	Pimpinella brachycarpa	AAA32442.1	U02886	Atriplex nummularia
SEQ ID NO. 822			CAA42304.1	X60346	Petunia x hybrida
CAA65313.1	AJ251365	Nicotiana glauca	CAA42303.1	X39517	Antirrhinum majus
SEQ ID NO. 823			AAA33269.1	X75597	Atriplex nummularia
CAA07020.1	AF006414	Lycopersicon esculentum	AAA89207.1	L26922	Taxus baccata
AA02231.1	AF043108	Pisum sativum	AAA87579.1	U45856	Zea mays
CAA61629.1	AJ251298	Oryza sativa	AAA87580.1	U45857	Zea mays
BA029033.1	AB015599	Coffea arabica	AAA07758.1	U17005	Solanum tuberosum
BA024535.1	AB006692	Nicotiana sylvestris	AAA54003.1	U97257	Lycopersicon esculentum
AA020232.1	AF043109	Pisum sativum	AAA32956.1	X36650	Hordeum vulgare
SEQ ID NO. 826			AAA33466.1	LI3432	Lycopersicon esculentum
AA07845.1	U96718	Selaginella lepidophylla	AAAF4241.1	AF251217	Zea mays
SEQ ID NO. 827			AAA33465.1	LI3431	Zea mays
AA010215.1	L32560	Chloroplast Pinus sylvestris	AAA34076.1	LI3431	Nicotiana tabacum
AA010214.1	L32561	Chloroplast Pinus sylvestris	AAA84543.1	M55147	Chloroplast Pisum sativum
			AAA85402.1	AF000615	Oryza sativa
			AAA86855.1	L27668	Chloroplast Chlamydomonas reinhardtii
			CAA33455.1	X15408	Zea mays

SEQ ID NO. 830	SEQ ID NO. 832	SEQ ID NO. 834
CrA62476.1	X90990	Solanum tuberosum
CrA6616.1	X37980	Solanum berthaultii
BrA6637.1	AF143505	Lycopersicon esculentum
BrA96393.1	AF002481	Cryza sativa
CrA82993.1	Z30332	Spinacia oleracea
CrA82994.1	Z30333	Mesembryanthemum crystallinum
AA50304.1	M22989	Pisum sativum
CrA82995.1	Z30331	Mesembryanthemum crystallinum
CrA82996.1	Z30330	Spinacia oleracea
CrA82997.1	Z30329	Mesembryanthemum crystallinum
BrA93409.1	AF002816	Cryza sativa
CrA82982.1	Z30329	Mesembryanthemum crystallinum
AA50584.1	AF089097	Salvia columbariae
AA50585.1	AF089099	Salvia columbariae
AA50586.1	AF089100	Salvia columbariae
AA53859.1	U99678	Lycopersicon esculentum
CrA50374.1	X71057	Nicotiana tabacum
AA50587.1	AF089101	Salvia columbariae
AA50588.1	AF089102	Salvia columbariae
AA53860.1	U99679	Lycopersicon esculentum
AA53861.1	U99680	Lycopersicon esculentum
AA50589.1	AF089103	Salvia columbariae
AA53862.1	U99681	Lycopersicon esculentum
CrA46554.1	X65604	Hordeum vulgare
AA537166.1	AF132743	Cryza sativa
SEQ ID NO. 832	SEQ ID NO. 834	SEQ ID NO. 836
CrA98160.1	Z73932	Lotus japonicus
BrA76422.1	AB024994	Cicer arietinum
BrA02116.1	D12548	Pisum sativum
CrA69701.1	Y08425	Nicotiana glaberrima
AA50678.1	U38464	Lycopersicon esculentum
BrA02118.1	D12550	Pisum sativum
AA537115.1	U58854	Glycine max
CrA51011.1	X72212	Nicotiana tabacum
AA565510.1	AF108883	Capsicum annuum
CrA90680.1	U38466	Lycopersicon esculentum
CrA98161.1	Z73933	Lotus japonicus
BrA02117.1	D12549	Pisum sativum
CrA98162.1	Z73934	Lotus japonicus
AA50159.1	L27417	Glycine max
CrA28535.1	S66160	Cryza sativa
CrA98159.1	Z73931	Lotus japonicus
BrA02115.1	D12547	Pisum sativum
CrA66447.1	X37853	Lotus japonicus
AA50389.1	U35026	Petunia x hybrida
AA508679.1	U38465	Lycopersicon esculentum
CrA98176.1	Z73948	Lotus japonicus
CrA98021.1	Z49152	Beta vulgaris
CrA98172.1	Z73944	Lotus japonicus
CrA04701.1	AF001367	Daucus carota
CrA90080.1	Z49900	Pisum sativum
AA506405.1	AF096249	Lycopersicon esculentum
CrA98174.1	Z73946	Lotus japonicus
CrA90082.1	Z49902	Pisum sativum
CrA98175.1	X69980	Lycopersicon esculentum
CrA90081.1	Z49901	Lotus japonicus
AA517726.1	U38471	Pisum sativum
AA534251.1	L08128	Brassica rapa
CrA98173.1	Z73945	Volvox carterii
CrA98049.1	Z49190	Lotus japonicus
CrA98179.1	Z73951	Beta vulgaris
AA534253.1	L08130	Lotus japonicus
CrA98165.1	Z73957	Volvox carterii
CrA98166.1	Z73957	Lotus japonicus
AA53902.1	U22433	Zea mays
AA50955.1	U32185	Glycine max
SEQ ID NO. 833	SEQ ID NO. 835	SEQ ID NO. 837
BrA76902.1	AB025968	Glycyrrhiza glabra
BrA23533.1	D89619	Pisum sativum
BrA33460.1	AB009029	Panax ginseng
AA540496.1	AF216755	Abies magnifica
BrA52266.1	AB033334	Luffa cylindrica
BrA6931.1	AB025344	Olea europaea
CrA75588.1	Y15366	Medicago truncatula
SEQ ID NO. 834	SEQ ID NO. 836	SEQ ID NO. 838
CrA98179.1	AJ245479	Brassica napus subsp. napus
BrA92836.1	AB032473	Brassica oleracea
BrA92837.1	AB032474	Brassica oleracea
BrA21001.1	AB054061	Brassica rapa

SEQ ID NO. 835	CABA3505.1	AJ239051	Cicer arietinum	CAM40862.1	X57662	Sorghum bicolor
	BAA22422.1	AB021379	Glycyrrhiza echinata	BAW03741.1	U32510	Triticum aestivum
	BAA74465.1	AB022732	Glycyrrhiza echinata	BAW03741.1	D16204	Nicotiana sylvestris
	CAA10067.1	AB012581	Cicer arietinum	BAW03743.1	Z48624	Hordeum vulgare
	CAA41490.1	AJ238439	Cicer arietinum	BAW03743.1	D16206	Nicotiana sylvestris
	BAW93634.1	AB025016	Lotus japonicus	BAW59213.1	D16205	Nicotiana sylvestris
	CAW04117.1	AJ000478	Helianthus tuberosus	AAW59213.1	I31377	Sinapis alba
	CAW04116.1	X96784	Helianthus tuberosus	AAW59212.1	I31374	Sinapis alba
	CAW56580.1	X96784	Nicotiana tabacum	AAW63582.1	AF009004	Pelargonium x hortorum
	CAW56742.1	AJ249800	Cicer arietinum	AAW63581.1	AF009003	Pelargonium x hortorum
	CAW56742.1	X32885	Persea americana	AAW63581.1	AF007819	Citrus unshiu
	BAW12139.1	D33968	Glycine max	CAW11893.1	AJ224324	Hordeum vulgare
	BAW56282.1	AF155332	Petunia x hybrida	CAW1238.1	AJ292768	Nicotiana glumbaginifolia
	BAW94590.1	AF022461	Glycine max	CAW48471.1	AF169205	Glycine max
	CAW64635.1	X95342	Nicotiana tabacum	CAW05728.1	AJ002893	Oryza sativa
	BAW13076.1	D86351	Glycine max	CAW05729.1	AJ002894	Oryza sativa
	AAW64432.1	AF218296	Pisum sativum	AAW88616.1	AF034945	Zea mays
	AAW09208.1	AF175278	Pisum sativum	AAW1179.1	AF031033	Euphorbia esula
	AAW49188.2	U29333	Pisum sativum	AAW01176.1	AF315811	Triticum aestivum
	AAW38930.1	AF135485	Glycine max	AAW49850.1	U50212	Nicotiana tabacum
	CAW70575.1	Y09423	Nepeta racemosa	AAW07749.1	U49482	Hordeum vulgare
	CAW70576.1	Y09424	Nepeta racemosa	CAW40863.1	X57663	Sorghum bicolor
	AAW94587.1	AF022458	Glycine max	AAW63589.1	AF009411	Oryza sativa
	AAW39454.1	AF014802	Echscholzia californica	AAW61786.1	AF036339	Euphorbia esula
	BAW92894.1	AB006790	Petunia x hybrida	SEQ ID NO. 842		
	BAW4072.1	AB028152	Torenia hybrida	CAW04385.1	AJ000885	Brassica napus
	CAW56743.1	AJ249801	Cicer arietinum	CAW06271.2	AJ004997	Lycopersicon esculentum
	BAW17562.1	U72654	Eustoma grandiflorum	CAW46492.1	AJ243340	Lycopersicon esculentum
	BAW74466.1	AB022733	Glycyrrhiza echinata	AAW62182.1	AF247164	Oryza sativa
	BAW22423.1	AB001380	Glycyrrhiza echinata	AAW32410.1	AF230277	Triphysaria versicolor
SEQ ID NO. 836	AAW28535.1	S66160	Oryza sativa	AAW3088.1	U52123	Lycopersicon esculentum
				AAW13632.1	AF059488	Lycopersicon esculentum
				AAW3900.1	AF230331	Zinnia elegans
				AAW33529.1	U93167	Prunus avium
				AAW13982.1	AF297521	Prunus avium
				BAW19676.1	AB029083	Prunus persica
SEQ ID NO. 839				AAW39001.1	AF230332	Zinnia elegans
	BAA12064.1	D83696	Nicotiana sylvestris	CAW19184.1	AJ291817	Cicer arietinum
	BAA05170.1	D26182	Nicotiana sylvestris	AAW21101.1	AF159563	Fragaria x ananassa
	AAW23220.1	AF310215	Sorghum bicolor	AAW33530.1	AF038815	Prunus armeniaca
	AAW30020.1	AF005359	Nicotiana glutinosa			

AAK28605.1	AF310960	Linum usitatissimum	AD25300.1	AF088276	Lycopersicon esculentum
AAK28803.1	AF310958	Linum usitatissimum	CRA63704.1	X33301	Oryza sativa
AAK28804.1	AF310959	Linum usitatissimum	AD25466.1	AF091950	Lycopersicon esculentum
CAC35321.1	AJ310150	Linum usitatissimum	AD25225.1	AF088279	Potamogeton crispus
CAC35327.1	AJ310152	Linum usitatissimum			
RA090953.1	AF175398	Glycine max	SEQ ID NO. 864		
CAC35332.1	AJ310157	Linum usitatissimum	AAK2562.1	AF032468	Zea mays
AD25973.1	AF093646	Linum usitatissimum	CRA05772.1	AF002959	Zea mays
CAC35337.1	AJ310162	Linum usitatissimum	AAA43410.1	M62720	Triticum aestivum
CAC35325.1	AJ310150	Linum usitatissimum	AAK73016.1	AF262934	Avicennia marina
CAC35336.1	AJ310161	Linum usitatissimum	BAB40310.1	AB026055	Nicotiana tabacum
CAC35328.1	AJ310153	Linum usitatissimum	BAB40311.1	AB026056	Nicotiana tabacum
CAC35330.1	AJ310155	Linum usitatissimum	AAA34125.1	L23762	Lycopersicon esculentum
CAC35333.1	AJ310158	Linum usitatissimum	AAK8617.1	AF034946	Zea mays
CAC35339.1	AJ310164	Linum usitatissimum	CAA51821.1	X73419	Lycopersicon esculentum
CAC35338.1	AJ310163	Linum usitatissimum	AAK51109.1	AF176040	Mesembryanthemum crystallinum
CAC35329.1	AJ310154	Linum usitatissimum	AAA64427.1	L29077	Pisum sativum
CAC35331.1	AJ310156	Linum usitatissimum	RAK2941.1	AF091621	Catharanthus roseus
CAC35334.1	AJ310159	Linum usitatissimum	RAK02168.1	UI5971	Oryza sativa
CAC35326.1	AJ310151	Linum usitatissimum	RAK90392.1	AF001081	Oryza sativa
CAC35323.1	AJ310150	Linum usitatissimum	RAK63813.1	AF008910	Pinus amarus
RAK0952.1	AF175369	Glycine max	AAK86089.1	UI7250	Brassica oleracea
AAK4346.1	AF211528	Nicotiana glauca	CAA10194.1	X713173	Pseudotsuga menziesii
AD25967.1	AF093640	Linum usitatissimum	CAA38111.1	X22338	Lycopersicon esculentum
AD25970.1	AF093643	Linum usitatissimum	AAK23847.1	AF001427	Lycopersicon esculentum
AD25966.1	AF093639	Linum usitatissimum	AAK22280.1	AF165420	Mesembryanthemum crystallinum
AD25971.1	AF093644	Linum usitatissimum	AAA34309.1	N28059	Triticum aestivum
AD25965.1	AF093638	Linum usitatissimum	BAA21006.1	D17786	Oryza sativa
AAK47618.1	U73916	Linum usitatissimum	AAK03236.1	AF180143	Glycine max
AAK08797.1	AJ009719	Solanum tuberosum	AAK32141.1	AF051240	Picea mariana
AD25968.1	AF093641	Linum usitatissimum	SEQ ID NO. 865		
AD25974.1	AF093647	Linum usitatissimum	CRA65735.1	X37012	Solanum tuberosum
AAK093648	AF093648	Linum usitatissimum			
AAK01022.1	U27081	Linum usitatissimum	SEQ ID NO. 866		
AD25972.1	AF093645	Linum usitatissimum	CAC3056.1	X92075	Solanum tuberosum
AD25969.1	AF093642	Linum usitatissimum	AAK15291.1	AF201458	Medicago sativa
AD25976.1	AF093649	Linum usitatissimum	CRA43167.1	X60755	Cicer arietinum
AAK01021.1	U27081	Linum usitatissimum			
AAK01052.1	AF175395	Glycine max	SEQ ID NO. 867		
			AD25558.1	AF049933	Petunia x hybrida
SEQ ID NO. 863					

CAAG68143.1	X9825	Petroelinum crispum	RAA05538.1	D31737	Nicotiana tabacum
BAH50522.1	ABG37678	Phaseolus vulgaris	RAA68396.1	AF227568	Oryza sativa
SEQ ID NO. 881			RAA94517.1	AF001600	Oryza sativa
AAAG17470.1	ATL23609	Triticum aestivum	RAA78044.1	AF248493	Oryza sativa
AAK31592.1	AF029178	Brassica rapa subsp. pekinensis	CAH51834.1	00069	Oryza sativa
AAAG33645.1	AF02917	Vicia sativa	RAA78021.1	AF238477	Oryza sativa
AAAD10204.1	AF030260	Vicia sativa	RAA78021.1	AF100771	Hordeum vulgare
CRB41474.1	AJ238402	Catharanthus roseus	RAA78021.1	AF164021	Oryza sativa
RAA94586.1	AF022457	Glycine max	RAA78018.1	AF238474	Oryza sativa
AAAD56282.1	AF155332	Petunia x hybrida	RAA001746.1	AF044489	Oryza sativa
AAA32913.1	N32885	Persea americana	RAA39437.1	AF003338	Oryza sativa
AAA17732.1	L19074	Catharanthus roseus	RAA78019.1	AF238475	Oryza sativa
RAA12159.1	D83968	Glycine max	RAA05648.1	D26601	Nicotiana tabacum
RAA32274.1	AF081575	Petunia x hybrida	SEQ ID NO. 883		
RAAG09208.1	AF175278	Pisum sativum	RAA83575.1	AF000399	Oryza sativa
CAH50155.1	X70824	Solanum melongena	SEQ ID NO. 884		
CAH49188.2	U29333	Pisum sativum	CAAG67575.1	X99134	Lycopersicon esculentum
RAA37433.1	AF150881	Lycopersicon peruvianum	CAAG78386.1	Z13396	Petunia x hybrida
RAA13076.1	D66351	Glycine max	RAA81101.1	U72762	Nicotiana tabacum
RAA03415.1	AF069494	Sinapis alba	RAA88223.1	RA028651	Nicotiana tabacum
RAA14961.1	AF214007	Brassica napus	RAA88222.1	RA028650	Nicotiana tabacum
RAA94590.1	AF022461	Glycine max	CAH78387.1	Z13397	Petunia x hybrida
RAAG14962.1	AF214008	Brassica napus	RAA88224.1	RA028652	Nicotiana tabacum
AAAF27282.1	AF122821	Capsicum annuum	RAA88221.1	RA028649	Nicotiana tabacum
RAA94588.1	AF022459	Glycine max	CAH43399.1	AJ006292	Antirrhinum majus
CAH70575.1	Y05423	Nepeta racemosa	CAH46952.1	X98308	Lycopersicon esculentum
RAA22422.1	AB001379	Glycyrrhiza echinata	CAAG67600.1	X99210	Lycopersicon esculentum
SEQ ID NO. 882			AAA33500.1	M73028	Zea mays
CAAG09580.1	AJ298992	Fagus sylvatica	CAAG67674.1	AF210616	Zea mays
AAA34002.1	N57449	Glycine max	CAAG64614.1	X95296	Lycopersicon esculentum
RAA11734.1	AY027437	Arachis hypogaea	RAA22566.1	AF161711	Pimpinella brachycarpa
CAAG06334.1	AJ005077	Lycopersicon esculentum	CAAG64615.1	X95297	Lycopersicon esculentum
RAA31141.1	AF305911	Oryza sativa	CAH75509.1	V15219	Oryza sativa subsp. indica
RAA46406.1	AF096250	Lycopersicon esculentum	SEQ ID NO. 888		
RAAG31142.1	AF305912	Hordeum vulgare	RAA07663.1	U15605	Nicotiana glutinosa
RAAD10056.1	AF110518	Lycopersicon esculentum	CAAG35456.1	AF211528	Nicotiana tabacum
RAAD10057.1	AF110519	Lycopersicon esculentum	CAH08798.1	AJ009720	Solanum tuberosum
RAA30005.1	AY029067	Rosa hybrid cultivar	CAH08797.1	AJ009719	Solanum tuberosum

RA090954.1	AF175399	Glycine max	AAK28805.1	AF310960	Linum usitatissimum
RA090951.1	AF175388	Glycine max	AAK28806.1	AF310961	Linum usitatissimum
RA025965.1	AF093638	Linum usitatissimum	SEQ ID NO. 889		
RA025968.1	AF093641	Linum usitatissimum	AAK18055.1	AF041848	Spinacia oleracea
AAA91021.1	U27081	Linum usitatissimum	AAK26113.1	AF073830	Solanum tuberosum
AAA91022.1	U27081	Linum usitatissimum	AAK64291.1	AF007582	Zea mays
CAC35330.1	AJ310155	Linum usitatissimum	SEQ ID NO. 891		
RA025973.1	AF093646	Linum usitatissimum	CAB56569.1	AJ011622	Antirrhinum majus
CAC35339.1	AJ310164	Linum usitatissimum	CAB56570.1	AJ011623	Antirrhinum majus
CAC35326.1	AJ310151	Linum usitatissimum	CAB56568.1	AJ011621	Antirrhinum majus
RA025974.1	AF093647	Linum usitatissimum	AAK51071.1	U89496	Zea mays
RA025966.1	AF093639	Linum usitatissimum	CAB63113.1	X92369	Antirrhinum majus
RA025975.1	AF093648	Linum usitatissimum	CAB63061.1	X92079	Antirrhinum majus
RA025976.1	AF093649	Linum usitatissimum	SEQ ID NO. 892		
RA025977.1	AF093645	Linum usitatissimum	CAB56570.1	AJ011623	Antirrhinum majus
RA025971.1	AF093644	Linum usitatissimum	CAB56569.1	AJ011622	Antirrhinum majus
RA025970.1	AF093643	Linum usitatissimum	CAB53061.1	X92079	Antirrhinum majus
RA025967.1	AF093640	Linum usitatissimum	CAB56568.1	AJ011621	Antirrhinum majus
RA025969.1	AF093642	Linum usitatissimum	CAB63113.1	X92369	Antirrhinum majus
CAC35321.1	AJ310150	Linum usitatissimum	AAK51071.1	U89496	Zea mays
RA025972.1	AF093649	Glycine max	AAK70119.1	U82230	Zea mays
RA025971.1	AF093644	Linum usitatissimum	SEQ ID NO. 893		
RA025970.1	AF093643	Linum usitatissimum	CAB71800.1	Y10847	Brassica juncea
RA025967.1	AF093640	Linum usitatissimum	CAB71798.1	Y10845	Brassica juncea
RA025969.1	AF093642	Linum usitatissimum	AAK25635.1	AF044172	Solanum tuberosum
CAC35321.1	AJ310150	Linum usitatissimum	RAA01279.1	D10476	Spinacia oleracea
RA025972.1	AF093649	Linum usitatissimum	RAA02438.1	D13153	Triticum aestivum
RA025971.1	AF093644	Linum usitatissimum	CAC59798.1	X68803	Zea mays
RA025970.1	AF093643	Linum usitatissimum	RA023907.1	AF073695	Oryza sativa
RA025967.1	AF093640	Linum usitatissimum	RA023909.1	AF073697	Oryza sativa
RA025969.1	AF093642	Linum usitatissimum	CAC25636.1	AF044173	Solanum tuberosum
CAC35321.1	AJ310150	Linum usitatissimum	CAA06819.1	AJ006024	Cicer arietinum
RA025972.1	AF093649	Linum usitatissimum	CAB64086.1	X64874	Capsicum annuum
RA025971.1	AF093644	Linum usitatissimum	CAB71799.1	Y10846	Brassica juncea
RA025970.1	AF093643	Linum usitatissimum	AAK16973.1	I05184	Chloroplast Spinacia oleracea
RA025967.1	AF093640	Linum usitatissimum	RA023908.1	AF073696	Oryza sativa
RA025969.1	AF093642	Linum usitatissimum	RA023910.1	AF073698	Oryza sativa

[illegible]

RAK25922.1	AF350505	Phaseolus vulgaris	BAK84939.1	AB018685	Camellia sinensis
RAK1453.1	X38377	Petroselinum crispum	BAK47400.1	AB018438	Ipomoea purpurea
BRH1433.1	D78609	Oryza sativa	BAK84048.1	AF028601	Ipomoea purpurea
BRH36492.1	AB021736	Oryza sativa	BAK84940.1	AB018686	Camellia sinensis
AKK01953.1	AF026054	Phaseolus acutifolius	BAK35378.1	X75964	Vitis vinifera
RAK37418.1	L34551	Oryza sativa	BRH34637.1	AB019243	Ipomoea batatas
RAK70216.1	Y09013	Triticum aestivum	AFH17576.1	AF1202182	Glycine max
RAK17195.1	Y10834	Hordeum vulgare	BAK54273.1	AF167556	Glycine max
BAK36514.1	U57389	Phaseolus vulgaris	BAK36407.1	AB011667	Ipomoea purpurea
RAK17168.1	Y10809	Petroselinum crispum	BAK65678.1	AF184271	Daucus carota
AAK14790.1	AY027510	Catharanthus roseus	RAK25960.1	AF029685	Fragaria x ananassa
CAC00656.1	AJ292743	Petroselinum crispum	RAK75997.1	Y16041	Zea mays
CH11499.1	AJ223624	Spinacia oleracea	BAK94014.1	AF010283	Sorghum bicolor
CAK66477.1	X97903	Vicia faba	CAK75998.1	Y16042	Zea mays
			CAK75996.1	Y16040	Zea mays
SEQ ID NO. 912			SEQ ID NO. 914		
RAK09817.1	AF278698	Lolium perenne	CAK57553.1	X82030	Phaseolus vulgaris
CAK13176.1	AJ231134	Saccharum officinarum	CAK66479.1	X97905	Vicia faba
CAK66707.1	X98083	Zea mays	CAK01237.1	AJ292767	Nicotiana glauca
CAK37407.1	Y13734	Zea mays	RAK66023.1	AF190655	Nicotiana glauca
CAK07424.1	AJ295838	Populus balsamifera subsp.	RAK30205.1	AF349864	Daucus carota
trichocarpa			CAK38374.1	U61316	Triticum aestivum
CAK12276.1	AJ224986	Populus balsamifera subsp.	CAK81127.1	Z26042	Anemia phyllitidis
trichocarpa			RAK79045.1	U34742	Spinacia oleracea
RAK43141.1	AJ217958	Populus tremuloides	CAK59368.1	AF043297	Chlamydomonas reinhardtii
CAK56103.1	X79566	Eucalyptus gunnii	RAK63202.1	AF240679	Cucumis sativus
CAK66063.1	X97433	Eucalyptus gunnii	CAK11894.1	AJ224325	Hordeum vulgare
RAK16242.1	AF297877	Eucalyptus saligna	RAK76825.1	AF190657	Nicotiana tabacum
CAK75352.1	Y15069	Zea mays	CAK06469.1	AJ005286	Hordeum vulgare
RAK53967.1	AF033851	Vigna radiata			
RAK49343.1	AF169801	Lilium hybrid cv. 'Acapulco'	SEQ ID NO. 915		Oryza sativa
CAK78930.1	Z17221	Gerbera hybrida	CAC37011.1	AJ238318	
CAK74240.1	Y11749	Vitis vinifera	SEQ ID NO. 918		Pisum sativum
CAK91922.1	Z67981	Callistephus chinensis	CAK7595.1	Z11510	
RAK56579.1	AF184272	Daucus carota	SEQ ID NO. 920		Nicotiana tabacum
BAK40789.1	AB058641	Lilium hybrid division I	BAK33755.2	AB017480	Caposium annuum
RAK22072.1	AB006792	Ipomoea nil	CAK62084.1	X90472	Chloroplast Medicago sativa
AAK26204.1	AF117268	Malus x domestica			
BAK59333.1	AB006793	Ipomoea nil			
BAK74699.1	AB018437	Ipomoea purpurea			
BAK36406.1	AB011667	Ipomoea purpurea			

AA017230.1	AF117339	Nicotiana tabacum	AAK1568.1	AF318492	Lycopersicon hirsutum
CAA09935.1	AV012165	Capsicum annuum	AF249317.1	AF249317	Glycine max
EAB17624.1	AB033535	Oryza sativa	SEQ ID NO. 927		
BA013021.1	D86121	Spinacia oleracea	CA051545.1	A0243876	Lycopersicon esculentum
EAE27916.1	AF220199	Pinus taeda	SEQ ID NO. 928		
BAB19880.1	AB052887	Oryza sativa	AA080450.1	AF161719	Triticum aestivum
BAB17626.1	AB033537	Oryza sativa	AA072110.1	U79958	Pisum sativum
BAB17625.1	AB033536	Oryza sativa	AA02842.1	AF209910	Prunus dulcis
CAA55389.1	AL117264	Oryza sativa	AAK31596.1	AY029172	Helianthus annuus
AA067835.1	U43398	Solanum tuberosum	AA072113.1	U79961	Zea mays
AA072877.1	AF205377	Chlamydomonas reinhardtii	BA072985.1	AP001550	Oryza sativa
AF220406	AF220406	Vitis riparia	SEQ ID NO. 929		
CAA06853.1	AV006095	Cicer arietinum	AAK09431.1	AF324244	Phaseolus vulgaris
SEQ ID NO. 926			AA018546.1	M94204	Nicotiana tabacum
AAK21965.1	AY028699	Brassica napus	AA015312.1	AF145053	Oryza sativa
AAK073405	AC073405	Oryza sativa	AA036361.1	AF264877	Zea mays
AA061628.1	AF007145	Brassica napus	AAK08141.1	AF234537	Periconium graveolens
AA061708.1	U93046	Daucus carota	AA054821.1	AF137379	Chloroplast Nephrolepis
AA043496.1	AF131222	Lophopyrum elongatum	olivacea		
AAK11674.1	AF339747	Lophopyrum elongatum	CA074893.1	Y14561	Pisum sativum
BA078764.1	AB023482	Oryza sativa	AA043860.1	AF166114	Chloroplast Mesostigma viride
AA033915.1	I27821	Oryza sativa	CA075382.1	Y15108	Glycine max
BA094509.1	AB041503	Populus nigra	SEQ ID NO. 936		
CA073134.1	Y12531	Brassica oleracea	AA038796.1	U73203	Nicotiana glutinosa
BA041504	AB041504	Populus nigra	AA069757.1	U75644	Lycopersicon esculentum
CA051834.1	U0069	Oryza sativa	AA049666.1	U83708	Lycopersicon esculentum
AAK1805.1	U28007	Lycopersicon esculentum	SEQ ID NO. 937		
AAK23542.1	U20948	Ipomoea trifida	AAK21495.1	AF202425	Nicotiana tabacum
BA092954.1	AF001551	Oryza sativa	AAK18620.1	AF352732	Nicotiana tabacum
AA07692.1	273295	Catharanthus roseus	AA040608.1	U54774	Petunia x hybrida
AA066615.1	AF142596	Nicotiana tabacum	AA033709.1	U16977	Petunia x hybrida
AA093304.1	U82481	Zea mays	AAK39483.1	AF020424	Nicotiana tabacum
AA076313.1	AF220603	Lycopersicon esculentum	BA032870.1	AB056062	Oryza sativa
AA07421.1	U59316	Lycopersicon esculentum	BA032868.1	AB056060	Oryza sativa
CA089179.1	AJ245479	Brassica napus subsp. napus	BA032871.1	AB056063	Oryza sativa
AA033008.1	M97667	Brassica napus			
AA091337.1	AF249318	Glycine max			
AA091324.1	AF244890	Glycine max			
AA091323.1	AF244889	Glycine max			
BA023676.1	AB000370	Brassica rapa			

308

CAA38993.1	X55052	Catharanthus roseus	AA63543.1	M55019	Lycopersicon esculentum
CAA55669.1	X79065	Zea mays	CAA76054.1	Y16088	Lupinus luteus
AAU0528.1	U97949	Zea mays	AAU0471.1	AF176858	Lupinus luteus
CB56779.1	X62976	Daucus carota	AAU2975.1	AF126551	Solanum tuberosum subsp.
CAA39239.1	X55706	Glycine max	tuberosum		
AA81177.2	AF012212	Tetraselmis chui	AA63403.1	M55021	Zea mays
AA87568.1	AF034201	Dunalabella tertiolecta	CAA48638.1	X68678	Zea mays
BA01412.1	D10555	Daucus carota	AAU65770.1	AF242312	Euphorbia esula
BA020971.1	D10556	Daucus carota	AAU57045.1	L29469	Oryza sativa
AAA33913.1	J04538	Oryza sativa	AAU51386.1	U92087	Solanum commersonii
			AAU57046.1	L29470	Oryza sativa
			AAU62706.1	M55018	Brassica napus
SEQ ID NO. 942			AAU05639.1	AF052206	Chlamydomonas reinhardtii
APU12662.1	AF032468	Zea mays	AAU57044.1	L29471	Oryza sativa
CAA05772.1	AJ002959	Zea mays	AAU01536.1	AF291180	Capsicum annuum
CAA34310.1	M62720	Triticum aestivum	AAU04430.1	L32095	Vicia faba
AAU73016.1	AF262834	Avicennia marina	CAA10766.1	AJ132763	Pseudotsuga menziesii
BA840310.1	AB026055	Nicotiana tabacum	CAA55889.1	X97255	Digitalis lanata
BA84031.1	AB026056	Nicotiana tabacum	CAA78459.1	Z14081	Nicotiana tabacum
AA88617.1	AF03946	Zea mays			
AAU4427.1	L25077	Psidium sativum			
CAA51821.1	X73419	Lycopersicon esculentum	SEQ ID NO. 944		
AAU51109.1	AF176040	Mesembryanthemum crystallinum	BAU21558.1	AB037156	Coix lacryma-jobi
AAA34125.1	L23762	Lycopersicon esculentum	BAU01472.1	D10622	Zea mays
AAU42941.1	AF091621	Catharanthus roseus	BAU07327.1	D38130	Zea mays
BAU90392.1	AF001081	Oryza sativa	AAU13812.1	AF117334	Ipomoea batatas
AAU02168.1	U15971	Oryza sativa	CAA11899.1	AJ224331	Castanea sativa
AAU63513.1	AF008910	Prunus armeniaca	BAU18768.1	AB038394	Triticum aestivum
AAA86089.1	U17250	Brassica oleracea	BAU19608.1	AB038392	Triticum aestivum
CAA56111.1	X29238	Lycopersicon esculentum	BAU95416.1	D31700	Glycine max
CAA10494.1	AJ131733	Pseudotsuga menziesii	BAU19610.1	AB039673	Hellanthus annuus
AAU223847.1	AF004247	Mesembryanthemum crystallinum	CAA50437.1	D64115	Glycine max
AAU22280.1	AF165420	Triticum aestivum	AAU23126.1	AF198389	Lycopersicon esculentum
AAA34309.1	M28059	Picea mariana	AAU23126.1	AF198388	Lycopersicon esculentum
AAU32141.1	AF051240	Oryza sativa	AAU24010.1	S49967	Oryza
BAU21006.1	D17786	Glycine max	AAU33903.1	J03469	Oryza sativa
AAU03236.1	AF180143		BAU66355.1	U54702	Oryza sativa
			AAU15090.1	AF240007	Sesamum indicum
SEQ ID NO. 943			AAU33911.1	J05595	Oryza sativa
CAA52414.1	X74403	Phaseolus vulgaris	AAU32872.1	L16824	Abrosia artemisiifolia
CAA59468.1	X55185	Catharanthus roseus	CAA40860.1	X57658	Oryza sativa
CAA69598.1	Y08273	Digitalis lanata			

BA13547.1	D88156	Hyoscyamus niger	AA335951.1	AF079355	Mesembryanthemum crystallin
BA85844.1	AB026344	Hyoscyamus niger	CAAC9576.1	AF298988	Fagus sylvatica
CA352307.1	AJ245634	Solanum tuberosum	CAAY2341.1	Y11607	Medicago sativa
CAC19810.1	AJ292343	Solanum tuberosum	AAAD17804.1	AF092431	Lotus japonicus
AA333282.1	L20474	Datura stramonium	AAAD17805.1	AF092432	Lotus japonicus
BA809776.1	L20485	Hyoscyamus niger	CAC10359.1	AJ277086	Nicotiana tabacum
BA85845.1	L2026545	Hyoscyamus niger	CAC10359.1	AJ277087	Nicotiana tabacum
CA45866.1	X64566	Cuphea lanceolata	AA336697.1	AF075579	Mesembryanthemum crystallinum
CMA45793.1	X64563	Brassica napus	AA336697.1	AF213455	Zea mays
AA20114.2	860064	Brassica napus	CA336698.1	AF075580	Mesembryanthemum crystallinum
CA74176.1	Y13861	Nicotiana tabacum	CAN90633.1	AJ277743	Fagus sylvatica
CA05816.1	AJ003025	Oryza sativa	CA336700.1	AF075582	Mesembryanthemum crystallinum
CA74177.1	Y13862	Nicotiana tabacum	CAC09575.1	AJ298987	Fagus sylvatica
CA05879.1	AJ003124	Petunia x hybrida	CAC26828.1	AF075603	Oryza sativa
CA078100.1	AF093628	Oryza sativa	CA336699.1	AF075581	Mesembryanthemum crystallinum
CA64729.1	X95462	Brassica napus	AA336699.1	AF075581	Zea mays
AA805206.1	L22766	Medicago truncatula	AA336832.1	U81960	
AA805205.1	L22765	Medicago truncatula	SEQ ID NO. 959		
SEQ ID NO. 949			CA306756.1	AJ005899	Nicotiana tabacum
AA61374.1	AF133267	Thlaspi caerulescens	CA306757.1	AJ005900	Nicotiana tabacum
AA030548.1	AF136379	Lycopersicon esculentum	AA356039.1	AF184068	Citrus limon
AA97509.1	AF246266	Lycopersicon esculentum			
AA317441.1	AF065444	Pisum sativum	SEQ ID NO. 964		
AA97510.1	AF246266	Lycopersicon esculentum	CA71238.1	Y10156	Brassica napus
AA97510.1	AF246266	Lycopersicon esculentum	CA362165.1	AJ223307	Brassica napus
AA97510.1	AF246266	Lycopersicon esculentum	CA71237.1	Y10155	Brassica napus
AA97510.1	AF136580	Medicago truncatula	AA349181.1	U39289	Brassica napus
AA97510.1	AF136580	Medicago truncatula	AA349182.1	U39319	Brassica napus
SEQ ID NO. 953			SEQ ID NO. 970		
AA318941.1	AF058757	Zea mays	AA318942.1	AF115543	Populus tremula x Populus
SEQ ID NO. 954			tremuloides		
AA643550.1	AF211532	Nicotiana tabacum	CAB65535.1	AJ011794	Zea mays
AA966875.1	AB045121	Oryza sativa	SEQ ID NO. 972		
AA78746.1	AB023486	Oryza sativa	CA306216.1	AJ004916	Prunus avium
AA85438.1	AF000616	Oryza sativa	AA369323.1	AF012867	Petroselinum crispum
BA77204.1	AB026262	Cicer arietinum	AA369322.2	AF012866	Petroselinum crispum
SEQ ID NO. 958			SEQ ID NO. 973		
AA31430.1	AF037667	Mesembryanthemum crystallinum	AA314324.1	AC051634	Oryza sativa
CA890634.1	AJ277744	Fagus sylvatica			

SEQ ID NO. 974	AMB88295.1	AF024512	Oryza sativa	SEQ ID NO. 978	AMC09416.1	M68929	Mitochondrion Marchantia
SEQ ID NO. 976	AAA32557.1	AB017159	Daucus carota	SEQ ID NO. 981	ACQ99620.1	AF040700	Oryza sativa
AAA82743.1	U19481	Nicotiana tabacum	Citrus maxima	SEQ ID NO. 983	AAAT4715.1	M64682	Spinacia oleracea
CMA59008.1	X84226	Solanum tuberosum	Nicotiana tabacum	AAA34041.1	M57413	Spinacia oleracea	Spinacia oleracea
CMA52976.1	X75082	Oryza sativa	Beta vulgaris	CMA40019.1	X56691	Spinacia oleracea	Spinacia oleracea
BAAR2390.1	AF000367	Oryza sativa	Oryza sativa	CMA28130.1	X04465	Plastid Marchantia polymorpha	Plastid Marchantia polymorpha
CMA59010.1	X84228	Populus x generosa	Populus x generosa				
CMA59009.1	X84227	Cucurbita sp.	Cucurbita sp.				
BAAR7328.1	D38132						
SEQ ID NO. 977	AF319457	Petroselinum crispum	Petroselinum crispum	SEQ ID NO. 984	BAAR68222.1	AB028650	Nicotiana tabacum
AAAG49341.1	AF319457	Helianthus annuus	Helianthus annuus	CMA78386.1	213996	Petunia x hybrida	Petunia x hybrida
AAAB71526.1	U94781	Petroselinum crispum	Petroselinum crispum	CMA78387.1	213997	Lycopersicon esculentum	Lycopersicon esculentum
AAK21311.1	AF338254	Zea mays	Zea mays	CMA64615.1	213997	Atirrhinum majus	Atirrhinum majus
AAU31326.1	AF147738	Helianthus annuus	Helianthus annuus	CMA43399.1	AB006292	Gossypium hirsutum	Gossypium hirsutum
AAAB93521.1	U94783	Vallisneria gigantea	Vallisneria gigantea	AAK19616.1	AF336283	Lycopersicon esculentum	Lycopersicon esculentum
AAAF33440.1	AF233886	Zea mays	Zea mays	CMA64614.1	X95296	Oryza sativa	Oryza sativa
AAAF7931.2	AF104924	Helianthus annuus	Helianthus annuus	CMA72218.1	Y11415	Lycopersicon esculentum	Lycopersicon esculentum
AAAF1829.1	U54785	Chara corallina	Chara corallina	CMA72217.1	X91334	Oryza sativa	Oryza sativa
BAAR7057.1	AB034154	Chara corallina	Chara corallina	CMA72217.1	Y11414	Lycopersicon esculentum	Lycopersicon esculentum
BAAR7057.1	AB007459	Helianthus annuus	Helianthus annuus	CMA66952.1	198308	Nicotiana tabacum	Nicotiana tabacum
BAAB71527.1	U94782	Helianthus annuus	Helianthus annuus	BAAR8224.1	AB028652	Nicotiana tabacum	Nicotiana tabacum
AAAB71528.1	U94784	Chlamydomonas reinhardtii	Chlamydomonas reinhardtii	BAAR8221.1	AB028649	Oryza sativa	Oryza sativa
AAAC27525.1	AF077352	Acetabularia cliftonii	Acetabularia cliftonii	CMA72187.1	Y11352	Glycine max	Glycine max
AAAB33062.1	U94398	Zea mays	Zea mays	BAAR23337.1	D88617	Glycine max	Glycine max
AAAD34597.1	AF147739	Acetabularia cliftonii	Acetabularia cliftonii	BAAR1733.2	AB029162	Glycine max	Glycine max
AAAB33061.1	U94397	Vallisneria gigantea	Vallisneria gigantea	BAAR1732.1	AB029161	Glycine max	Glycine max
AAAF43441.1	AF233887	Anemia phyllitidis	Anemia phyllitidis	BAAR1731.1	AB029160	Glycine max	Glycine max
CAAA7477.1	X67103	Gossypium hirsutum	Gossypium hirsutum	BAAR1730.1	AB029159	Glycine max	Glycine max
CAAA7476.1	X67102	Vigna mungo	Vigna mungo	BAAR1736.1	AB029165	Oryza sativa	Oryza sativa
AAA92114.1	U48788	Triticum aestivum	Triticum aestivum	AAAG12185.1	Y11350	AC037425	Oryza sativa
AAA92121.1	U48786	Azolla rubra	Azolla rubra	AAAG13574.1	AC037425	Nicotiana tabacum	Nicotiana tabacum
AAA92117.1	U48787	Trifolium subterraneum	Trifolium subterraneum	BAAB11203.1	U72762	Nicotiana tabacum	Nicotiana tabacum
AAA92111.1	U48789	Nitella cristata	Nitella cristata	BAAR8223.1	AB028651	Hordeum vulgare	Hordeum vulgare
AAA92120.1	U48785			CMA50221.1	X70876		
AAA92119.1	U48782						
AAA92115.1	U48790						

[illegible]

AAA93465.1	AB028077	Physcomitrella patens
RAD37699.1	AF145730	Oryza sativa
RAD21017.1	D26578	Daucus carota
CBA63222.1	X92489	Glycine max
SEQ ID NO. 1007		
ABA88617.1	AF034946	Zea mays
AAA34125.1	L23762	Lycopersicon esculentum
ABA64427.1	L29077	Pisum sativum
TRAF1821.1	X73419	Lycopersicon esculentum
RAD51109.1	AF176040	Mesembryanthemum crystallinum
ABA02168.1	U15971	Oryza sativa
AAA86089.1	U17250	Brassica oleracea
AAA24941.1	AF091621	Catharanthus roseus
RAD21006.1	D17786	Oryza sativa
AAA73016.1	AF262834	Avicennia marina
AAA34310.1	M62720	Triticum aestivum
BAB40310.1	AB026055	Nicotiana tabacum
ABA84311.1	X82938	Nicotiana tabacum
CBA6493.1	AJ005348	Lycopersicon esculentum
RAC12662.1	AF032468	Cicer arietinum
RBA90392.1	AF001081	Zea mays
CBA65772.1	AJ002959	Oryza sativa
RAF22280.1	AF154420	Zea mays
RAF03236.1	AF180143	Mesembryanthemum crystallinum
ABG23847.1	AF004247	Glycine max
ABA63513.1	AF008910	Lycopersicon esculentum
AAA34309.1	M28059	Prunus armeniaca
CAA10494.1	AJ131733	Triticum aestivum
AAC32141.1	AF051240	Pseudotsuga menziesii
SEQ ID NO. 1008		
CBA63222.1	X92489	Glycine max
CAA64221.1	X94449	Pimpinella brachycarpa
CAA64152.1	X94375	Pimpinella brachycarpa
CAA64491.1	X95193	Pimpinella brachycarpa
CAA65456.2	X96681	Oryza sativa
RAF19980.1	AF211193	Oryza sativa
AAK31270.1	AC079890	Oryza sativa
AAA74017.1	U30475	Glycine max
L41869		
CBA64442.1	X94986	Hordeum vulgare
RAF02991	AF082991	Manihot esculenta
RAD02369.1	U04773	Avena sativa
AAA09850.1	U04087	Zea mays
CAA52293.1	X74217	Zea mays
RAD10503.1	U35816	Zea mays
AAA65946.1	U25157	Zea mays
RAF28800.1	AF112888	Catharanthus roseus
CAA40058.1	X56734	Trifolium repens
AAA5196.1	X78433	Avena sativa
CBA40057.1	X56733	Trifolium repens
RAF79989.2	Z21977	Brassica napus
RAF17381.1	U95298	Manihot esculenta
CAA57913.1	X82577	Brassica napus
RAF38784.1	U72154	Brassica napus
AAA84906.1	U28047	Oryza sativa
CAC08209.1	AJ005950	Cicer arietinum
SEQ ID NO. 1006		
RAG43283.1	AF139210	Oryza sativa
RAD37698.1	AF145729	Oryza sativa
RAF01765.1	AF184278	Glycine max
RAD37695.1	AF145726	Oryza sativa
RAF19980.1	AF211193	Oryza sativa
AAK31270.1	AC079890	Oryza sativa
CAA65456.2	X36681	Oryza sativa
RAD3466.1	AB028078	Physcomitrella patens
CAA64491.1	X35193	Pimpinella brachycarpa
CAA62608.1	X31212	Lycopersicon esculentum
CBA64152.1	X94375	Pimpinella brachycarpa
BA05625.1	D26576	Daucus carota
AAA63768.2	AF339748	Helianthus annuus
AAAD38144.1	AF139497	Prunus armeniaca
CAA06728.1	AJ005833	Cratogeomys plantagineum
RAF37700.1	AF145731	Oryza sativa
AAA93462.1	AB028074	Physcomitrella patens
AAA93463.1	AB028075	Physcomitrella patens
RAB18171.1	AB042769	Zinnia elegans
RAA05624.1	D26575	Daucus carota
AAA93467.1	AB028079	Physcomitrella patens

BA093463.1	AB028075	Physcomitrella patens	AAE34538.1	AF195817	Beta vulgaris
BA037695.1	AF145726	Oryza sativa	AAE34527.1	AF195806	Vigna radiata
AF145731	AF145731	Oryza sativa	AAE34520.1	AF195809	Vigna radiata
CA006728.1	AJ005833	Craterostigma plantagineum	AAE34526.1	AF195805	Lens culinaris
AF145727	Oryza sativa	Zinnia elegans	AAE34516.1	AF195818	Glycine max
BA018169.1	AB042767	Zinnia elegans	AAE4591.1	AF022462	Glycine max
AB06717.1	AJ005820	Craterostigma plantagineum	AAE45143.1	AF195819	Glycine max
AA05622.1	D26573	Daucus carota	AAE34533.1	AF195812	Pisum sativum
BA093462.1	AB028074	Physcomitrella patens	AAE34534.1	AF195813	Lupinus albus
BA026870	D26578	Physcomitrella patens	AAE34537.1	AF195816	Beta vulgaris
CA064417.1	X94947	Lycopersicon esculentum	AAE34536.1	AF195815	Trifolium repens
BA005624.1	D26575	Daucus carota	AAE34525.1	AF195804	Lens culinaris
AF184277	AB028080	Glycine max	AAE34535.1	AF195814	Trifolium repens
BA093468.1	AB028079	Daucus carota	CAE56503.1	X70824	Solanum melongena
BA093467.1	AF184278	Physcomitrella patens	AAE56282.1	AF155332	Petunia x hybrida
BA093461.1	AB028073	Physcomitrella patens	AAE39318.1	AF029858	Sorghum bicolor
BA018171.1	AB042769	Zinnia elegans	BAB40323.1	AB037244	Asparagus officinalis
BA093464.1	AB028076	Physcomitrella patens	SEQ ID NO. 1010		
BA005623.1	D26574	Daucus carota	CAE37479.1	I41355	Brassica rapa
BA093466.1	AB028078	Physcomitrella patens	BAE19610.1	D64115	Vigna unguiculata
BA093460.1	AB028072	Physcomitrella patens	BAE19608.1	D31700	Glycine max
AF145728	AF145728	Oryza sativa	AAE23127.1	AF198389	Lycopersicon esculentum
SEQ ID NO. 1009			CAE60610.1	X87126	Zea mays
BA012159.1	D83968	Glycine max	BAE09666.1	D63342	Zea mays
BA013076.1	D86351	Glycine max	BAE01472.1	D10622	Lycopersicon esculentum
AA038930.1	AF135485	Glycine max	AAE23126.1	AF198388	Ricinus communis
BA084071.1	AB028151	Antirrhinum majus	CAA89697.1	Z49697	Glycine max
BA022423.1	AB001380	Glycyrrhiza echinata	CAA97905.1	U51853	Oryza sativa
BA074466.1	AB022733	Glycyrrhiza echinata	BAE89582.1	AF001073	Manihot esculenta
BA04072.1	AB028152	Torenia hybrida	AAE72202.1	AF265551	Zea mays
BA093432.1	AF024931	Lotus japonicus	CAE07327.1	D38130	Zea mays
AF034532.1	AF195811	Trifolium pratense	CAE11899.1	AJ224331	Castanea sativa
BA034529.1	AF195808	Vigna radiata	CAE60634.1	X87168	Sorghum bicolor
BA034528.1	AF195807	Vigna radiata	BAE21558.1	AB037156	Coix lacryma-jobi
BA034531.1	AF195810	Trifolium pratense	BAE95416.1	AB039673	Helianthus annuus
BA038289.1	AF135484	Glycine max	BAE33903.1	J03469	Oryza sativa
BA073636	AB023636	Glycyrrhiza echinata	BAE24010.1	S49967	Oryza

[illegible]

AAE66243.1	AF243181	Lycopersicon esculentum	BAC39512.1	AF043284	Gossypium hirsutum
CBH5280.1	AU248323	Medicago sativa subsp. x varia	CAC39384.1	AU291817	Cicer arietinum
ACB32446.1	U76296	Spinacia oleracea	CAC39301.1	AF230332	Zinnia elegans
SEQ ID NO. 1034			CBH6105.1	Y07782	Oryza sativa
BAA33143.1	D87261	Oryza sativa	CAB6492.1	AU243340	Lycopersicon esculentum
BAA33142.1	D87260	Oryza sativa	CAB63197.1	AU239068	Lycopersicon esculentum
SEQ ID NO. 1035			CAB64201.1	AF096776	Lycopersicon esculentum
AGA45501.1	AY012513	Populus balsamifera subsp. trichocarpa	AAB38074.1	U30477	Oryza sativa
AGA43046.1	AY012515	Populus x canescens	AAF32410.1	AF230277	Triphysaria versicolor
SEQ ID NO. 1039			AAB81562.1	U85246	Oryza sativa
AAA97411.1	U51918	Pisum sativum	CBA06771.2	AU004997	Lycopersicon esculentum
SEQ ID NO. 1042			AAF32409.1	AF230276	Triphysaria versicolor
CBH42234.1	X59714	Zea mays	CBA04363.1	AU000885	Brassica napus
SEQ ID NO. 1045			AAF17571.1	AF059489	Lycopersicon esculentum
BAA88182.1	AF000836	Oryza sativa	AAE13983.1	AF202120	Regnellidium diphyllum
SEQ ID NO. 1046			AAC96081.1	AF297522	Prunus avium
ACB6077.1	AF049350	Nicotiana tabacum	AAD49956.1	AF049354	Nicotiana tabacum
ACB6079.1	AF049352	Nicotiana tabacum	AAF32411.1	AF167360	Rumex palustris
ACB6078.1	AF049351	Nicotiana tabacum	AAF35002.1	AF230333	Triphysaria versicolor
ABH37749.1	U30460	Cucumis sativus	AAD13632.1	AF059488	Zinnia elegans
AAE32920.1	AF184232	Lycopersicon esculentum	BAE23732.1	AB049406	Eustoma grandiflorum
ABG1875.1	AF291659	Striga asiatica	CAC19183.1	AU291816	Cicer arietinum
ABD47901.1	AF085330	Pinus taeda	CAC06435.1	AU276007	Festuca pratensis
BAF21101.1	AF159563	Fragaria x ananassa	ABG22921.1	AF164233	Lycopersicon esculentum
ABA40637.1	U64893	Pinus taeda	AAF62182.1	AF247164	Oryza sativa
ABA40635.1	U64891	Pinus taeda	CAC06432.1	AU276006	Festuca pratensis
ABA40634.1	U64890	Pinus taeda	SEQ ID NO. 1047		
ABA40636.1	U64892	Pinus taeda	BAA37171.1	AB022674	Oryza sativa
BAH19676.1	AF029083	Prunus persica	BAA37170.1	AB022673	Oryza sativa
ACB63088.1	U82123	Lycopersicon esculentum	CAC34031.1	J02849	Spinacia oleracea
AAE13982.1	AF297521	Prunus avium	CBA44226.1	X62368	Nicotiana tabacum
ACB33530.1	AF036815	Prunus armeniaca	CBA44214.1	X62339	Nicotiana tabacum
ABH37746.1	U30382	Cucumis sativus	CBA48414.1	X68340	Secale cereale
ACB33529.1	U93167	Prunus armeniaca	AAF21989.1	S93166	Chloroplast Nicotiana
			SYLVESTRIS		
			CAC48400.1	X68325	Secale cereale
			BAE54786.1	AF137379	Chloroplast Nephrolepis
			OLIVACEA		
			ABH66886.1	AF010581	Oryza sativa

AB001684	Chlorella vulgaris	U73916	Linum usitatissimum
BA057991.1	Plasid Protocithea wickerhamii	AD025974.1	Linum usitatissimum
CA036874		AF03647	Linum usitatissimum
		AF03648	Linum usitatissimum
		AF03649	Glycine max
		AF03650	Linum usitatissimum
		AF03651	Linum usitatissimum
		AF03652	Linum usitatissimum
		AF03653	Linum usitatissimum
		AF03654	Linum usitatissimum
		AF03655	Linum usitatissimum
		AF03656	Linum usitatissimum
		AF03657	Linum usitatissimum
		AF03658	Linum usitatissimum
		AF03659	Linum usitatissimum
		AF03660	Linum usitatissimum
		AF03661	Linum usitatissimum
		AF03662	Linum usitatissimum
		AF03663	Linum usitatissimum
		AF03664	Linum usitatissimum
		AF03665	Linum usitatissimum
		AF03666	Linum usitatissimum
		AF03667	Linum usitatissimum
		AF03668	Linum usitatissimum
		AF03669	Linum usitatissimum
		AF03670	Linum usitatissimum
		AF03671	Linum usitatissimum
		AF03672	Linum usitatissimum
		AF03673	Linum usitatissimum
		AF03674	Linum usitatissimum
		AF03675	Linum usitatissimum
		AF03676	Linum usitatissimum
		AF03677	Linum usitatissimum
		AF03678	Linum usitatissimum
		AF03679	Linum usitatissimum
		AF03680	Linum usitatissimum
		AF03681	Linum usitatissimum
		AF03682	Linum usitatissimum
		AF03683	Linum usitatissimum
		AF03684	Linum usitatissimum
		AF03685	Linum usitatissimum
		AF03686	Linum usitatissimum
		AF03687	Linum usitatissimum
		AF03688	Linum usitatissimum
		AF03689	Linum usitatissimum
		AF03690	Linum usitatissimum
		AF03691	Linum usitatissimum
		AF03692	Linum usitatissimum
		AF03693	Linum usitatissimum
		AF03694	Linum usitatissimum
		AF03695	Linum usitatissimum
		AF03696	Linum usitatissimum
		AF03697	Linum usitatissimum
		AF03698	Linum usitatissimum
		AF03699	Linum usitatissimum
		AF03700	Linum usitatissimum
		AF03701	Linum usitatissimum
		AF03702	Linum usitatissimum
		AF03703	Linum usitatissimum
		AF03704	Linum usitatissimum
		AF03705	Linum usitatissimum
		AF03706	Linum usitatissimum
		AF03707	Linum usitatissimum
		AF03708	Linum usitatissimum
		AF03709	Linum usitatissimum
		AF03710	Linum usitatissimum
		AF03711	Linum usitatissimum
		AF03712	Linum usitatissimum
		AF03713	Linum usitatissimum
		AF03714	Linum usitatissimum
		AF03715	Linum usitatissimum
		AF03716	Linum usitatissimum
		AF03717	Linum usitatissimum
		AF03718	Linum usitatissimum
		AF03719	Linum usitatissimum
		AF03720	Linum usitatissimum
		AF03721	Linum usitatissimum
		AF03722	Linum usitatissimum
		AF03723	Linum usitatissimum
		AF03724	Linum usitatissimum
		AF03725	Linum usitatissimum
		AF03726	Linum usitatissimum
		AF03727	Linum usitatissimum
		AF03728	Linum usitatissimum
		AF03729	Linum usitatissimum
		AF03730	Linum usitatissimum
		AF03731	Linum usitatissimum
		AF03732	Linum usitatissimum
		AF03733	Linum usitatissimum
		AF03734	Linum usitatissimum
		AF03735	Linum usitatissimum
		AF03736	Linum usitatissimum
		AF03737	Linum usitatissimum
		AF03738	Linum usitatissimum
		AF03739	Linum usitatissimum
		AF03740	Linum usitatissimum
		AF03741	Linum usitatissimum
		AF03742	Linum usitatissimum
		AF03743	Linum usitatissimum
		AF03744	Linum usitatissimum
		AF03745	Linum usitatissimum
		AF03746	Linum usitatissimum
		AF03747	Linum usitatissimum
		AF03748	Linum usitatissimum
		AF03749	Linum usitatissimum
		AF03750	Linum usitatissimum
		AF03751	Linum usitatissimum
		AF03752	Linum usitatissimum
		AF03753	Linum usitatissimum
		AF03754	Linum usitatissimum
		AF03755	Linum usitatissimum
		AF03756	Linum usitatissimum

BA92953.1	AF001551	Oryza sativa	BA92406.1	AB055515	Nicotiana tabacum
BA94516.1	AF001800	Oryza sativa	CA558760.1	X83879	Nicotiana tabacum
AA52097.1	AF008885	Nicotiana tabacum	CA557721.1	X82270	Medicago sativa
AA63542.1	U02948	Ipomoea trifida	AA881720.1	AF247136	Capsicum annuum
AA63628.1	AY007545	Brassica napus	AA881490.1	AF149424	Ipomoea batatas
AA33315.1	L27821	Oryza sativa	AG640580.1	AF216316	Oryza sativa
BA94509.1	AB041503	Populus nigra	CA731188.1	AU224336	Medicago sativa
AA46420.1	AF100771	Hordeum vulgare	AA612138.1	AF241166	Oryza sativa
BA23676.1	AB000870	Brassica rapa	AG640581.1	AF216317	Oryza sativa
BA94517.1	AF001800	Oryza sativa	CA611889.1	AJ251330	Oryza sativa
AA21132.1	D88193	Brassica rapa	CA73323.1	Y12785	Petroselinum crispum
BA06285.1	D30049	Brassica rapa	CA13967.1	AJ250311	Oryza sativa
BA94529.2	AF001800	Oryza sativa	CA56314.1	X79993	Avena sativa
AA61708.1	U93048	Daucus carota	CA49592.1	X69971	Nicotiana tabacum
CA79935.1	Z18921	Brassica oleracea	CA58466.1	X63440	Petunia x hybrida
AAK11674.1	AF339747	Lophopyrum elongatum	AAK01710.1	AF332873	Oryza sativa
RA43496.1	AF131222	Lophopyrum elongatum	AA640579.1	AF216315	Oryza sativa
BA94510.1	AB041504	Populus nigra	CA557719.1	X82268	Medicago sativa
RA333000.1	N76647	Brassica oleracea	CA28850.1	AF079318	Triticum aestivum
CA67145.1	X98520	Brassica oleracea	BA747434.1	AB016802	Zea mays
AA847421.1	U59316	Lycopersicon esculentum	AA73257.1	AF154329	Pisum sativum
BA07577.2	D38364	Brassica rapa	BA09600.1	D61377	Nicotiana tabacum
AA333006.1	N97667	Brassica napus	AF81419.1	AF247135	Capsicum annuum
CA89179.1	AJ245479	Brassica napus subsp. napus	BA074733.1	AB016801	Zea mays
BA92837.1	AB032474	Brassica oleracea	CA05328.1	AJ002314	Nicotiana tabacum
SEQ ID NO. 1067			CA05329.1	AJ002315	Nicotiana tabacum
AA723903.1	AF194416	Oryza sativa	CA111861.1	AJ224164	Petunia x hybrida
AA52659.1	AF177392	Oryza sativa	CA558595.1	X83620	Petunia x hybrida
AA723902.1	AF194415	Oryza sativa	CA111862.1	AJ224165	Petunia x hybrida
AA28617.1	AF129087	Medicago sativa	CA558594.1	X83619	Brassica napus
CA861750.1	AJ275316	Cicer arietinum	BA92823.1	U18365	Oryza sativa
AA57843.1	U596716	Sesquiorhiza lepidophylla	BA92214.1	AF001278	Trifolium repens
AA65766.1	AF242308	Euphorbia esula	CA67554.1	X99100	
BA18271.1	AB035141	Chlamydomonas reinhardtii	SEQ ID NO. 1070		
CA58761.1	X83880	Nicotiana tabacum	AF274033		Attriplex hortensis
CA47099.1	L66469	Medicago sativa	CA12822.1	AJ299252	Nicotiana tabacum
ABA1548.1	U70042	Medicago sativa	CA24587.1	AF071893	Prunus armeniaca
AB58396.1	U94192	Nicotiana tabacum	BA73899.1	AF193803	Oryza sativa
CA50036.1	X70703	Pisum sativum	BA17838.1	AB023882	Oryza sativa
AA73236.1	AF153061	Pisum sativum	AA634545.1	AF211827	Nicotiana tabacum

[illegible]

CA021391.1	AJ401274	Zea mays	AA591322.1	AF244888	Glycine max
AA037427.1	AF149277	Phaseolus vulgaris	AAH1568.1	AF318492	Lycopersicon hirsutum
CA094692.1	AU224742	Ipomoea batatas	AA090771.1	U67422	Zea mays
AB41810.1	L36156	Medicago sativa	AA076307.1	AF220603	Lycopersicon pimpinellifolii
BA082307.1	AB027753	Nicotiana tabacum	AA076314.1	AF220603	Lycopersicon esculentum
BA065464.2	AF247700	Oryza sativa	AA087424.1	U59317	Lycopersicon pimpinellifolii
BA092500.1	AF001383	Oryza sativa	BA092954.1	AF001551	Oryza sativa
AA037430.1	AF149280	Phaseolus vulgaris	AA087422.1	U59318	Lycopersicon esculentum
CA062615.1	X91232	Mercularialis annua	AA091324.1	AF244890	Glycine max
CA098519.1	AF007211	Glycine max	SEQ ID NO. 1080		
AA097734.1	AF014502	Glycine max	AA086850.1	AF031540	Eritillaria agrestis
CA039486.1	X56011	Trifolium aestivum	AA086850.1	AF0101422	Cichorium intybus
BA094962.1	AB042103	Asparagus officinalis	AA086850.1	AF031540	Oryza sativa
BA037429.2	AF149279	Phaseolus vulgaris	AA086850.1	AF031540	Cichorium intybus
AA053026.1	AF244923	Spinacia oleracea	AA086850.1	AF0101422	Oryza sativa
CA071488.1	Y10462	Spinacia oleracea	AA086850.1	AF0101422	Oryza sativa
AA057378.1	AF145349	Glycine max	AA086850.1	AF0101422	Oryza sativa
CA076376.1	Y16778	Spinacia oleracea	AA086850.1	AF0101422	Oryza sativa
BA01443.1	D30115	Amoracia rusticana	AA086850.1	AF0101422	Oryza sativa
CA054485.1	X85228	Trifolium aestivum	AA086850.1	AF0101422	Oryza sativa
SEQ ID NO. 1079			AA086850.1	AF0101422	Oryza sativa
AA016628.1	AY007545	Brassica napus	AA086850.1	AF0101422	Oryza sativa
AA01965.1	AY028699	Brassica napus	AA086850.1	AF0101422	Oryza sativa
AA030390.1	AC073405	Oryza sativa	AA086850.1	AF0101422	Oryza sativa
BA034509.1	AB041503	Populus nigra	AA086850.1	AF0101422	Oryza sativa
BA034510.1	AB041504	Populus nigra	AA086850.1	AF0101422	Oryza sativa
BA078764.1	AB023482	Oryza sativa	AA086850.1	AF0101422	Oryza sativa
AA061805.1	U28007	Lycopersicon esculentum	AA086850.1	AF0101422	Oryza sativa
AA043496.1	AF131222	Lophopyrum elongatum	AA086850.1	AF0101422	Oryza sativa
AA011674.1	AF339747	Lophopyrum elongatum	AA086850.1	AF0101422	Oryza sativa
AA0191337.1	AF249318	Glycine max	AA086850.1	AF0101422	Oryza sativa
AA051336.1	AF249317	Glycine max	AA086850.1	AF0101422	Oryza sativa
AA027894.1	AF023164	Zea mays	AA086850.1	AF0101422	Oryza sativa
AA066615.1	AF142596	Nicotiana tabacum	AA086850.1	AF0101422	Oryza sativa
CA051834.1	Q00669	Oryza sativa	AA086850.1	AF0101422	Oryza sativa
AA021872.1	AC078082	Phaseolus vulgaris	AA086850.1	AF0101422	Oryza sativa
AA027895.1	AF023165	Zea mays	AA086850.1	AF0101422	Oryza sativa
AA051708.1	U93048	Daucus carota	AA086850.1	AF0101422	Oryza sativa
AA037692.1	Z73295	Catharanthus roseus	AA086850.1	AF0101422	Oryza sativa
AA033915.1	L27821	Oryza sativa	AA086850.1	AF0101422	Oryza sativa

ABR040808.1	AB058921	Nicotiana suaveolens x	AAE37266.1	AF220405	Vitis riparia
Nicotiana tabacum			ABR36223.1	S81261	Brassica napus
Nicotiana tabacum			ABR36222.1	S81261	Brassica napus
Nicotiana tabacum			ABR49266.1	U33885	Brassica napus
Nicotiana tabacum			ABR49265.1	U33884	Brassica napus
Nicotiana tabacum			ABR28439.1	AF120092	Nicotiana tabacum
			SEQ ID NO. 1103		
			BAA90508.1	AF001111	Oryza sativa
			BAA90507.1	AF001111	Oryza sativa
			CRA94437.1	Z70524	Spirodela polyrrhiza
			BMA83352.1	AF000391	Oryza sativa
			SEQ ID NO. 1104		
			BD25300.1	AF088276	Lycopodium esculentum
			CRA63704.1	X93301	Oryza sativa
			BD25225.1	AF088279	Potamogeton crispus
			BD24566.1	AF109150	Lycopodium esculentum
			SEQ ID NO. 1105		
			AA05983.1	AF049708	Glycine max
			AA4360.1	L33912	Zea mays
			AA05982.1	AF049706	Chloroplast Glycine max
			AA61397.1	L11529	Daucus carota
			BA11417.1	L78573	Oryza sativa
			AA4361.1	L33913	Zea mays
			AA41796.1	AF135862	Glycine max
			BAA95630.1	AB042521	Oryza sativa
			SEQ ID NO. 1106		
			RA625928.1	AF260919	Petunia x hybrida
			RA625927.1	AF260918	Petunia x hybrida
			AA00686.1	U16348	Phaseolus vulgaris
			AA28907.1	U18349	Phaseolus vulgaris
			AA15818.1	AF061107	Zea mays
			CA92300.1	AJ251719	Zea mays
			RA49219.1	U39860	Oryza sativa
			RA39455.1	AF020545	Petunia x hybrida
			RA49212.1	U39863	Oryza australiensis
			RA49216.1	U39865	Oryza officinalis
			RA49213.1	U39864	Oryza eichingeri
			SEQ ID NO. 1107		
			AA05931	AF005931	Brassica napus
			AA05928	AF005928	Brassica napus
			AA24448.1	AB003516	Panax ginseng
			AA06223.1	AF004923	Lycopodium esculentum
			SEQ ID NO. 1108		
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana
			SEQ ID NO. 1109		
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana
			SEQ ID NO. 1110		
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana
			AA05931	AF005931	Tulipa gesneriana
			AA05928	AF005928	Tulipa gesneriana
			AA06223.1	AF004923	Tulipa gesneriana

RAD56411.1	AF185269	Tulipa gesneriana	PAB39155.1	AB048713	Pisum sativum
SEQ ID NO. 1107		Lycopersicon esculentum	RAG13663.1	AF263457	Zea mays
AMB69757.1	U75644	Lycopersicon esculentum	RAG30816.1	AF001160	Oryza sativa
AMB38796.1	U73203	Nicotiana glutinosa	RAC398090.1	AF067400	Zea mays
SEQ ID NO. 1109		Nicotiana tabacum	SEQ ID NO. 1114		
BRA33331.1	D83583	Nicotiana tabacum	CMA05249.1	AJ002204	Zea mays
ERA33796.1	AB010717	Nicotiana tabacum	CAC03739.1	AJ251568	Zea mays
RAG59996.1	AY017473	Glycine max	CAC04001.1	AJ251018	Zea mays
BRA23641.1	D50679	Zea mays	CAC04002.1	AJ251019	Zea mays
RAC24584.1	AF071890	Prunus armeniaca	SEQ ID NO. 1115		
CMA70137.1	Y08937	Chlamydomonas reinhardtii	RAD22518.1	AF001136	Pinus radiata
AAA74456.1	U10419	Phaseolus vulgaris	SEQ ID NO. 1119		
ERA09122.1	D50556	Oryza sativa	CMA06925.1	AJ006228	Nicotiana tabacum
RAC17127.1	AF065616	Capsicum annuum	SEQ ID NO. 1122		
APA60450.1	M23456	Zea mays	CRA61752.1	AJ275318	Cicer arietinum
CMA06095.1	AJ293240	Lotus japonicus	CAC14890.1	AJ295156	Phragmites australis
BRA50233.1	U90429	Glycine max	RAB68603.1	U82433	Prunus amniaca
CMA6940.1	X66145	Nicotiana tabacum	SEQ ID NO. 1124		
CMA6942.1	X66147	Nicotiana tabacum	RA116018.1	AF081514	Taxus canadensis
CMA34893.1	X17031	Spinacia oleracea	SEQ ID NO. 1125		
CMA46941.1	X66146	Betula pendula	CAC34339.1	AJ308597	Solanum tuberosum
AMC34042.1	AF082602	Nicotiana tabacum	RAF97863.1	AF175507	Eucalyptus camaldulensis
AMC34043.1	AF082603	Leavenworthia crassa	CAAL12225.1	AJ224926	Solanum tuberosum
AMC34044.1	AF082604	Leavenworthia crassa	RAD16279.1	AF099096	Samanea saman
AMC34046.1	AF082605	Leavenworthia uniflora	SEQ ID NO. 1127		
AMC34045.1	AF082605	Leavenworthia stylosa	CRA67728.1	X93948	Vigna radiata
AMC34047.1	AF082607	Leavenworthia stylosa	SEQ ID NO. 1133		
AAA36730.1	L23855	Glycine max	RAC36700.1	AF075582	Mesembryanthemum crystallinum
AMC34048.1	AF082608	Leavenworthia uniflora	RAG43835.1	AF213455	Zea mays
SEQ ID NO. 1110		Tulipa gesneriana	RAD17804.1	AF092431	Lotus japonicus
RAG14455.1	AF283707	Tulipa gesneriana	RAC36698.1	AF075580	Mesembryanthemum crystallinum
RAG14456.1	AF283708	Tulipa gesneriana	RAC36697.1	AF075579	Mesembryanthemum crystallinum
RAG14454.1	AF283706	Tulipa gesneriana	RAD17805.1	AF092432	Lotus japonicus
AMC08401.1	AF053564	Mesembryanthemum crystallinum			
SEQ ID NO. 1111					

CRA72341.1	Y11607	Medicago sativa	AAA33945.1	J03919	Glycine max
CAC10359.1	AJ277086	Nicotiana tabacum	AAA33944.1	J03920	Glycine max
CAC10359.1	AJ277087	Nicotiana tabacum	AAA48299.1	X68217	Pisum sativum
CAC09575.1	AJ298987	Fagus sylvatica	CRA48298.1	X68216	Pisum sativum
CAC26828.1	AF075603	Oryza sativa	AA050278.1	AF169830	Glycine max
CAC36699.1	AF075581	Mesembryanthemum crystallinum	SEQ ID NO. 1164		
AA011430.1	AF097667	Mesembryanthemum crystallinum	BAA34510.1	AB010878	Nicotiana tabacum
CAC90634.1	AJ277744	Fagus sylvatica	CMA63651.1	X93160	Spinacia oleracea
CAC35951.1	AJ277955	Mesembryanthemum crystallinum	CMA75149.1	Y14932	Spinacia oleracea
AA093832.1	U81960	Zea mays	SEQ ID NO. 1167		
CAC09576.1	AJ298988	Fagus sylvatica	AA090815.1	AP001168	Oryza sativa
SEQ ID NO. 1141		Solanum tuberosum	AA090804.1	AP001168	Oryza sativa
CRA55860.1	X79273		BAA90803.1	AP001168	Oryza sativa
SEQ ID NO. 1147			SEQ ID NO. 1168		
AA059330.1	M31545	Hordeum vulgare	AA025966.1	AF302082	Nicotiana tabacum
CAC48996.1	U20260	Glycine max	AAA33915.1	I27821	Oryza sativa
AA061881.1	I39279	Lycopersicon esculentum	AA061708.1	U93048	Daucus carota
CMA46787.1	X65974	Nicotiana tabacum	AA021872.1	AF078082	Phaseolus vulgaris
CMA46786.1	X65973	Nicotiana tabacum	BAA06538.1	D31737	Nicotiana tabacum
AA018861.1	U03632	Chlamydomonas reinhardtii	AA066615.1	AF142596	Nicotiana tabacum
AA018862.1	U03633	Chlamydomonas reinhardtii	AA060977.1	U67422	Zea mays
SEQ ID NO. 1153			AA094516.1	AP001800	Oryza sativa
BAB39155.1	AB048713	Pisum sativum	AA093834.1	U82481	Zea mays
BAA90816.1	AP001168	Oryza sativa	BAA92954.1	AP001551	Oryza sativa
AA013663.1	AF263457	Zea mays	CRA41878.1	Y18259	Brassica oleracea
CAC98090.1	AF067400	Zea mays	AA021965.1	AF028699	Brassica napus
CAC98091.1	AF067401	Oryza sativa	BAA94517.1	AP001800	Oryza sativa
BAB39156.1	AB048714	Pisum sativum	CMA73134.1	Y12531	Brassica oleracea
SEQ ID NO. 1154			AA023542.1	U20948	Ipomoea trifida
CRA2242.1	X60391	Phaseolus vulgaris	BA078764.1	AB023482	Oryza sativa
CMA49895.1	X70441	Nicotiana glauca	CMA67145.1	X98520	Brassica oleracea
AA094892.1	I36982	Petroselinum crispum	CMA84879.1	Y18260	Brassica oleracea
SEQ ID NO. 1163			BAA94509.1	AB041503	Populus nigra
BAA95840.1	AF002070	Oryza sativa	CMA73133.1	Y12530	Brassica oleracea
CRA48297.1	X68215	Pisum sativum	AA092836.1	AB032473	Brassica oleracea
CRA48300.1	X68218	Pisum sativum	SEQ ID NO. 1170		
			AA088875.1	U93272	Prunus armeniaca

333

BAR21149.1	AF002899	Oryza sativa	CA364635.1	X95342	Nicotiana tabacum
CRA76725.1	Y17276	Lycopersicon esculentum	RAC32274.1	AF081575	Petunia x hybrida
CRA71234.1	Y10149	Lycopersicon esculentum	CAA50155.1	X70824	Solanum melongena
CRA76724.1	Y17275	Lycopersicon esculentum	RAB40324.1	AB037245	Asparagus officinalis
CAA64566.1	X95270	Lycopersicon esculentum	BA030323.1	AB037244	Asparagus officinalis
CAB67120.1	Y18932	Lycopersicon esculentum	CRA70576.1	Y09424	Nepeta racemosa
CAB67119.1	Y18931	Lycopersicon esculentum	SEQ ID NO. 1189		
CRA59964.1	X85975	Alnus glutinosa	CAA50312.1	X70981	Solanum melongena
CAA07001.1	AF006380	Lycopersicon esculentum	CRA70575.1	Y09423	Nepeta racemosa
CRA06597.1	AJ006376	Lycopersicon esculentum	Y09424		Nepeta racemosa
CRA76726.1	Y17277	Lycopersicon esculentum	AAA32913.1	X32885	Persea americana
CRA06598.1	AF006377	Lycopersicon esculentum	CAA50645.1	X71654	Solanum melongena
RAD02075.3	AF036960	Glycine max	RBA03635.1	D14990	Solanum melongena
RAG38994.1	AF160513	Glycine max	RBA03941.1	Z33875	Mentha x piperita
RBA03290.1	AF037371	Oryza sativa	RAB94584.1	AF022157	Glycine max
RAG09442.1	AF200467	Oryza sativa	RAP27282.1	AF122821	Capsicum annuum
RAP31406.1	AF201883	Gossypioideis kirkii	RAB94588.1	AF022459	Glycine max
CRA65690.1	AJ270956	Lycopersicon esculentum	RBA03923.1	AB037244	Asparagus officinalis
CRA10987.1	AJ222782	Hordeum vulgare	RBA03924.1	AB037245	Asparagus officinalis
SEQ ID NO. 1188			RBA1970.1	L24438	Thlaspi arvense
CRA43505.1	AJ239051	Cicer arletinum	CAA50313.1	X70982	Solanum melongena
BAA22422.1	AB001379	Glycyrrhiza echinata	RAD47832.1	AF166332	Nicotiana tabacum
BAA74465.1	AB022732	Glycyrrhiza echinata	CAA65603.1	AJ238612	Catharanthus roseus
BRA33634.1	AB025016	Lotus japonicus	CAA57421.1	X81827	Zea mays
CBA41490.1	AJ238439	Cicer arletinum	RAB94589.1	AF022460	Zea mays
CRA10067.1	AJ012581	Cicer arletinum	RBA03422.1	X81828	Zea mays
CAA04117.1	AJ000478	Helianthus tuberosus	RBA07196.1	Y11368	Zea mays
CAA04116.1	AJ000477	Helianthus tuberosus	CAA57425.1	X81831	Zea mays
AAA32913.1	M32885	Persea americana	RAC39318.1	AF029858	Petunia x hybrida
RAD56282.1	AF155332	Petunia x hybrida	RAC39318.1	AF029858	Sorghum bicolor
RAB94590.1	AF022461	Pisum sativum	CAA55580.1	X96784	Nicotiana tabacum
RAG09208.1	AF175278	Pisum sativum	RAG44132.1	AF218296	Pisum sativum
CAA65580.1	X96784	Nicotiana tabacum	RBA12159.1	D83968	Nicotiana tabacum
RAC09188.2	U29333	Pisum sativum	CAA64635.1	X95342	Glycine max
CBA56742.1	AJ249800	Cicer arletinum	CRA72208.1	Y11404	Zea mays
BBA12159.1	D83968	Glycine max	CAA57423.1	X81829	Zea mays
RAC39454.1	AF014802	Eschscholzia californica	CRA72207.1	Y11403	Zea mays
RAG44132.1	AF218296	Pisum sativum	CAA7424.2	X81830	Zea mays
RBA17562.1	U72654	Eustoma grandiflorum	AD44150.1	AF124815	Mentha spicata
BBA13076.1	D86351	Glycine max			

335

AAA33129.1	M91372	Cucumis sativus	Y08273	Digitalis lanata
AAD37376.1	AF145350	Glycine max	AAA57045.1	Oryza sativa
CAA40796.1	X57564	Armoracia rusticana	AAD62706.1	Brassica napus
AAA34050.1	M74103	Nicotiana sylvestris	AAA57046.1	Oryza sativa
AAC49819.1	AF014468	Oryza sativa	AAA57047.1	Lycopersicon esculentum
CAA71493.1	Y10467	Spinacia oleracea	AAA59469.1	Catharanthus roseus
BAAT7388.1	AB024438	Scutellaria baicalensis	AAC05639.1	Chlamydomonas reinhardtii
CAA71494.1	Y10468	Spinacia oleracea	AAA57044.1	Oryza sativa
AAB67737.1	L77080	Stylosanthes humilis	AAD22975.1	Solanum tuberosum subsp.
CAAG2597.1	X91172	Raphanus sativus	AAA52414.1	Phaseolus vulgaris
AAFC63024.1	AF244921	Spinacia oleracea	AAAF00471.1	Lupinus luteus
AAA342973.1	M73234	Hordeum vulgare	AAAF00471.1	Lupinus luteus
CAAG4413.1	X94943	Lycopersicon esculentum	AAAF00471.1	Zea mays
AAA33121.1	M32742	Cucumis sativus	AAAG3403.1	Vicia faba
CAAG2615.1	X91232	Mercurialis annua	CAAG4638.1	Solanum commersonii
BAO03911.1	D16442	Oryza sativa	AAAG4430.1	Euphorbia esula
AAC49821.1	AF014470	Oryza sativa	AAAF51386.1	Capsicum annuum
BAAL1553.1	D83225	Populus nigra	AAAF51386.1	Pseudotsuga menziesii
CAH599487.1	A0276227	Hordeum vulgare	AAAG01536.1	Digitalis lanata
AAH97853.1	AF043234	Striga asiatica	CAAL0766.1	Nicotiana tabacum
AAA34108.1	J02979	Nicotiana tabacum	CAAG5889.1	Nicotiana tabacum
AAH5637.1	L13654	Lycopersicon esculentum	CAA78459.1	
CAA59487.1	X85230	Triticum aestivum		
SEQ ID NO. 1195			SEQ ID NO. 1200	
AAD39534.2	AF150630	Gossypium hirsutum	CAA50575.1	Nicotiana tabacum
AAC39333.1	AF030052	Oryza sativa subsp. japonica	CAA56318.1	Nicotiana tabacum
SEQ ID NO. 1196			CAA53366.1	Oryza sativa
CAA98168.1	273940	Lotus japonicus	CAA04702.1	Olea europaea
AAA34004.1	L14930	Glycine max	AAC49701.1	Borago officinalis
AAA34242.1	L14928	Vigna acconitifolia	AAAG2621.1	Cuscuta reflexa
CAH98169.1	273941	Lotus japonicus	CAA04703.1	Olea europaea
BAH71504.1	U92219	Prunus armeniaca	CAA32990.1	Brassica oleracea
CAH9170.1	273942	Lotus japonicus	CAAD48240.1	Nicotiana tabacum
CAH98171.1	273943	Lotus japonicus	CAAD10774.1	Petunia x hybrida
CAH4600.1	X65550	Pisum sativum	AAAF60299.1	Petunia x hybrida
AAH47557.1	U97142	Mesembryanthemum crystallinum	SEQ ID NO. 1201	
BAH2904.1	DL13758	Oryza sativa	BAH08910.1	Cucumis sativus
SEQ ID NO. 1198			AAAD16897.1	Glycine max
			BAH25169.1	Hordeum vulgare
			BAH25003.1	Oryza sativa

CRA60054.1	X86101	Hordeum vulgare	AA094972.1	AF091458	Oryza sativa
CRA63140.1	X92403	Hordeum vulgare	BAA33457.1	AB007504	Triticum aestivum
BAA25167.1	D88382	Hordeum vulgare	AA050187.1	U49734	Sorghum bicolor
BAA11091.1	D67088	Cucumis sativus	AA049617.1	U78692	Oryza sativa
CRA60055.1	X86102	Hordeum vulgare	AF19048.1	AF058698	Oryza sativa
AAG41962.1	AF305613	Chlamydomonas reinhardtii	AAC83170.1	U78948	Malus x domestica
AAG20480.1	AF294753	Hordeum vulgare	SEQ ID NO. 1203		
RAG02479.1	AF294752	Hordeum vulgare	AAG28780.1	AF306518	Brassica napus
SEQ ID NO. 1202			CAC10555.1	AJ279059	Lotus japonicus
RAG09811.1	AF275345	Lycopersicon esculentum	CAC10555.1	X95098	Lycopersicon esculentum
RAG27150.1	AF345246	Ipomoea batatas	AAG11397.1	AF118858	Lycopersicon esculentum
RAG27455.1	AF060880	Paulownia kawakami	AA016012.1	AF080541	Nepenthes alata
RAK27151.1	AF346303	Ipomoea batatas	RA071774.1	AF188744	Brassica napus
AA094005.1	AF008651	Solanum tuberosum	SEQ ID NO. 1205		
RAK21250.1	AF335237	Petunia x hybrida	AA028600.1	AF247134	Limonanthes douglasii
BA081880.1	AB003322	Oryza sativa	AA049186.1	AF370888	Simmondsia chinensis
RAK21250.1	AJ249141	Hordeum vulgare	AB072178.1	AF003563	Brassica napus
CAC29335.1	AJ293816	Oryza sativa	AAA96054.1	U50771	Brassica napus
RAK66690.1	AF144623	Canavalia lineata	AAK11266.1	AF333040	Bunallia salina
AA094006.1	AF008652	Solanum tuberosum	CAC11746.1	AJ291728	Zea mays
RAK21256.1	AF335243	Petunia x hybrida	CAC25109.1	AJ291728	Brassica napus
RAK84133.1	AF101420	Cichorium intybus	CAC25110.1	AF054497	Brassica napus
AA094009.1	AF112149	Zea mays	CAC25111.1	AF054499	Brassica rapa
RAK25246.1	D89671	Ceratopteris richardii	CAC25112.1	AF054500	Brassica oleracea
AA09136.1	AF150932	Physcomitrella patens	SEQ ID NO. 1206		
AA09135.1	AF150931	Physcomitrella patens	AA06346.1	AF195653	Vitis vinifera
RAK71579.1	AF072534	Capsicum annuum	BAA28872.1	AB006009	Pyrus pyrifolia
RAK21257.1	AF335244	Petunia x hybrida	CAC10270.1	AJ243427	Malus x domestica
RAK71434.1	U78890	Oryza sativa	CAC36740.1	AF090143	Malus x domestica
CAR81865.1	AB026295	Oryza sativa	BA074546.2	AB000834	Nicotiana tabacum
AB011675	AF158543	Picea abies	CAB62167.1	AJ242828	Castanea sativa
RAK18376.1	AF158543	Picea abies	AF195654	AF195654	Vitis vinifera
AA010625.1	AF035378	Loilium temulentum	CAC09477.1	AL442113	Oryza sativa
AB097354.1	AJ245146	Hordeum vulgare	AA038064.1	U32440	Prunus avium
RAK21252.1	AF335239	Petunia x hybrida	AB095116.1	U71214	Brassica rapa
AB003325	AF035329	Oryza sativa	CAC10492.1	AJ131731	Pseudotsuga menziesii
BA081883.1	AB003325	Oryza sativa	BAA95017.1	AB031670	Cestrum elegans
AA051377.1	U91964	Medicago sativa	RAB02259.1	U57787	Avena sativa
CRA67968.1	X99654	Betula pendula			
RAK10626.1	AF035379	Loilium temulentum			
RAK10626.1	AF035378	Nicotiana tabacum			
CRA53782.1	X76188				

[illegible]

CA943183.1	X60773	Glycine max	AA941524.1	M91079	Medicago sativa
AAK13449.1	AF325917	Arachis hypogaea	CA94490.1	X16470	Phaseolus vulgaris
AAK23840.1	AF302807	Sesamum indicum	CA944140.1	M91080	Medicago sativa
AAK24224.1	X62352	Helianthus annuus	CA906202.1	A0004902	Glycine max
AAK13450.1	AF325918	Arachis hypogaea	AA950174.1	J030433	Pisum sativum
AAK17994.1	X82677	Hordeum vulgare	BA976416.1	AB024988	Cicer arietinum
AAK01171.1	AF288622	Fagopyrum esculentum	CA932050.1	AF307301	Lotus corniculatus
AA57544.1	X82019	Brassica napus	AA930542.1	AF308141	Lotus corniculatus
CA943182.1	X60772	Glycine max	AA930541.1	AF308140	Lotus corniculatus
CA957545.1	X82020	Brassica napus	SEQ ID NO. 1215		
AA67699.1	J05212	Zea mays	AA906347.1	AF195654	Vitis vinifera
AA901098.1	U47099	Daucus carota	AA906346.1	AF195653	Vitis vinifera
AA901240.1	AF019212	Oryza sativa subsp. indica	BA928872.1	AB006009	Pyrus pyrifolia
AA902240.1	U43931	Oryza sativa	BA974546.2	AB000834	Nicotiana tabacum
CA955348.1	X78679	Helianthus annuus	CA910270.1	AJ243427	Malus x domestica
AA968066.1	U13702	Zea mays	CA936740.1	AF090143	Malus x domestica
CA944801.1	X95555	Brassica napus	CA909477.1	U1442113	Oryza sativa
AA924547.1	AT117126	Brassica oleracea	AA938064.1	U32440	Pyrus avium
CA946800.1	X35554	Brassica napus	AA95118.1	U71244	Brassica rapa
CA946805.1	X35559	Brassica napus	CA962167.1	AJ242828	Castanea sativa
CA970173.1	Y08986	Brassica napus	AA95017.1	AB031870	Castanea sativa
SEQ ID NO. 1213			CA910492.1	AJ131731	Pseudotsuga menziesii
CA949498.1	AJ287322	Arabidopsis lyrata	CA910491.1	AB029918	Nicotiana tabacum
AA987071.1	AF031921	Raphanus sativus	BA951655.1	U57787	Avena sativa
CA935577.1	X75963	Vitis vinifera	AA953368.1	U77657	Oryza sativa
BA936552.1	AB011794	Citrus sinensis	AA955090.1	AF178653	Vitis riparia
AA916013.1	AF061808	Elaeagnus umbellata	CA909288.1	AJ010501	Cicer arietinum
CA932729.1	X14589	Petunia x hybrida	CA933293.1	X15224	Nicotiana tabacum
CA968769.1	Y00852	Petunia x hybrida	CA933292.1	X15223	Nicotiana tabacum
CA919321.1	Z67980	Callistephus chinensis	AA961590.1	AF003007	Vitis vinifera
AA960296.1	AF233637	Petunia x hybrida	AA922664.1	AF227324	Vitis vinifera
CA919331.1	Z67989	Dianthus caryophyllus	AA93095.1	J01209	Thaumatococcus daniellii
BA966474.1	AF028238	Ipomoea purpurea	SEQ ID NO. 1216		
CA932730.1	X14590	Petunia x hybrida	BA941137.1	AB060130	Zea mays
BA950334.1	AB037396	Ipomoea batatas	BA920581.1	AB042268	Zea mays
CA960441.1	Z22760	Zea mays	BA973300.1	AB042260	Zea mays
CA948774.1	X68978	Malus sp.	BA920580.1	AB042267	Zea mays
CA948775.1	X68979	Malus sp.	BA920582.1	AB042269	Zea mays
BA909795.1	D63577	Pueraria montana var. lobata	BA92873.1	AB042291	Zea mays
CA978763.1	Z15046	Phaseolus vulgaris			

CAR61565.1	X89385	Clarkia lewisii	ARC32140.1	AF051239	Picea mariana
CAR45616.1	X64332	Clarkia lewisii	AA334308.1	M55604	Triticum aestivum
CAR61571.1	X89391	Clarkia concinna	AA334285.1	M90663	Triticum aestivum
RAA23205.1	AB006088	Dioscorea quinqueloba	AA342466.1	M90664	Triticum aestivum
RAA23205.1	AB006617	Dioscorea nipponica	CRA71762.1	Y10804	Nicotiana tabacum
RAA22037.1	AB006619	Dioscorea septemloba	SEQ ID NO. 1229		
RAA22038.1	AB006620	Dioscorea tenuipes	CAA55693.1	X79086	Zea mays
RAA23175.1	D8920	Dioscorea tenuipes	CAA55691.1	X79085	Zea mays
RAA22033.1	AB006615	Dioscorea gracillima	AA97508.1	AF242298	Oryza sativa
RAA22036.1	AB006618	Dioscorea quinqueloba	SEQ ID NO. 1234		
RAA22034.1	AB006616	Dioscorea gracillima	AA507063.1	U15605	Nicotiana glutinosa
CAA50403.1	X71085	Clarkia lewisii	CAAO0798.1	AJ009720	Solanum tuberosum
RAA07826.1	AF293478	Leavenworthia stylosa	CAO09951.1	AF175388	Glycine max
RAA07828.1	AF293477	Leavenworthia stylosa	RA643546.1	AF211528	Nicotiana tabacum
RAA07822.1	AF293474	Leavenworthia stylosa	CAC35326.1	AJ310151	Linum usitatissimum
RAA07821.1	AF293473	Leavenworthia stylosa	CAC35339.1	AJ310164	Linum usitatissimum
RAA07820.1	AF293472	Leavenworthia stylosa	CAC35321.1	AJ310150	Linum usitatissimum
SEQ ID NO. 1224			CAC35329.1	AJ310154	Linum usitatissimum
RAA03447.1	AF002817	Oryza sativa	CAC35338.1	AJ310163	Linum usitatissimum
RAA92400.1	AF001366	Oryza sativa	CAAO0797.1	AJ009719	Solanum tuberosum
CAR63102.2	X92205	Petunia x hybrida	CAC35330.1	AJ310155	Linum usitatissimum
CAR63101.1	X92204	Petunia x hybrida	CAC35337.1	AJ310162	Linum usitatissimum
RAA84803.1	AF000559	Oryza sativa	CAC35334.1	AJ310159	Linum usitatissimum
SEQ ID NO. 1226			RAA28806.1	AF310964	Linum usitatissimum
RAA43046.1	AF124045	Sorghum bicolor	CAC35325.1	AJ310150	Linum usitatissimum
SEQ ID NO. 1227			CAC35328.1	AJ310153	Linum usitatissimum
RAA49832.1	AF005492	Oryza sativa	CAO35326.1	AJ310161	Linum usitatissimum
RAA04862.1	AF046934	Paulownia kawakami	RAA28803.1	AF310958	Linum usitatissimum
RAA97100.1	AB040471	Paulownia tabacum	CAC35327.1	AJ310152	Linum usitatissimum
CAAO5896.1	AB003142	Lycopersicon esculentum	CAC35332.1	AJ310157	Linum usitatissimum
CAAS2015.1	X73635	Lycopersicon esculentum	CAC35332.1	AF310966	Linum usitatissimum
RAA52015.1	AF002092	Oryza sativa	RAA28812.1	AF310968	Linum usitatissimum
CRA71687.1	Y10685	Glycine max	CAC35331.1	AJ310156	Linum usitatissimum
CRAA1453.1	X58577	Petroselinum crispum	CAO35323.1	AJ310150	Linum usitatissimum
CRA70216.1	Y09013	Triticum aestivum	RAA28805.1	AF310960	Linum usitatissimum
SEQ ID NO. 1228			RAA28808.1	AF310961	Linum usitatissimum
CAR09619.1	AJ201148	Lycopersicon esculentum	RAA47618.1	U73916	Linum usitatissimum

AAK28809.1	AF310962	Linum usitatissimum	SEQ ID NO. 1247	Petunia x hybrida
AAK25965.1	AF093638	Linum usitatissimum	BAK21921.1	Petunia x hybrida
AAK25969.1	AF093642	Linum usitatissimum	BAK21922.1	Petunia x hybrida
AAK25968.1	AF093641	Linum usitatissimum	BAK19110.1	Petunia x hybrida
AAK31022.1	U27081	Linum usitatissimum	BAK006601	Petunia x hybrida
AAK25972.1	AF093645	Linum usitatissimum	BAK006603	Petunia x hybrida
AAK25971.1	AF093644	Linum usitatissimum	BAK21925.1	Petunia x hybrida
AAK25973.1	AF093646	Linum usitatissimum	BAK21924.1	Petunia x hybrida
AAK25970.1	AF093640	Linum usitatissimum	BAK21920.1	Petunia x hybrida
AAK25974.1	AF093643	Linum usitatissimum	BAK19111.1	Petunia x hybrida
AAK25976.1	AF093647	Linum usitatissimum	BAK21926.1	Petunia x hybrida
AAK25975.1	AF093649	Linum usitatissimum	BAK21927.1	Petunia x hybrida
AAK25977.1	AF093648	Linum usitatissimum	BAK96071.1	Petunia x hybrida
AAK31021.1	U27081	Linum usitatissimum	BAK96070.1	Petunia x hybrida
AAK25966.1	AF093639	Linum usitatissimum	BAK53260.1	Brassica rapa
AAK09952.1	AF175389	Glycine max	BAK53261.1	Brassica rapa
AAK01052.1	AF175395	Glycine max	BAK19114.1	Petunia x hybrida
AAK01051.1	AF175394	Glycine max	BAK05078.1	Petunia x hybrida
AAK09954.1	AF175399	Glycine max	BAK26942.1	Delosia glomerata
SEQ ID NO. 1237			BAK05077.1	Petunia x hybrida
AAK27919.1	AF220203	Malus x domestica	BAK06243.1	Nicotiana tabacum
AAK19614.1	AF336281	Gossypium hirsutum	BAK19112.1	Petunia x hybrida
SEQ ID NO. 1238			BAK01713.1	Oryza sativa
AAK17476.1	AF106844	Oryza sativa	BAK05076.1	Petunia x hybrida
AAK32134.1	AF051233	Picea mariana	BAK05079.1	Petunia x hybrida
SEQ ID NO. 1239			BAK21928.1	Petunia x hybrida
BAK11940.1	AB038492	Atriplex gmelini	BAK19261.1	Petunia x hybrida
BAK83337.1	AB021878	Oryza sativa	BAK19113.1	Petunia x hybrida
BAK16381.1	AB033990	Ipomoea nil	BAK05078.1	Oryza sativa
BAK16380.1	AB033989	Ipomoea nil	BAK05079.1	Oryza sativa
AAK27314.1	AY028416	Citrus x paradisi	BAK19261.1	Brassica oleracea var.
AAK28483.1	AF307944	Zea mays	BAK19113.1	Brassica rapa
SEQ ID NO. 1245			SEQ ID NO. 1250	Brassica napus
AAK21982.1	AF115543	Populus tremula x Populus tremuloides	BAK2375.1	Triticum aestivum
CAB65535.1	AJ011794	Zea mays	SEQ ID NO. 1253	
			BAK04864.1	Oryza sativa
			BAK05546.1	Oryza sativa
			BAK15522.1	Oryza sativa
			BAK35777.1	Brassica oleracea var.
			BAK25681.1	Brassica rapa
			BAK36394.1	Brassica napus
			BAK8067.1	Triticum aestivum

RAC32111.1	AF051206	Picea mariana	RAC37245.1	L20621	Zea mays
BAB20886.1	AB053294	Oryza sativa	RAC35344.1	AF072448	Ipomoea trifida
CAA55599.1	X78622	Chlamydomonas reinhardtii	RAF072450	AF072450	Ipomoea trifida
CRA94534.1	X70877	Ricinus communis	RAF89445.1	U89270	Tripsacum dactyloides
CRA56850.1	X70887	Chlamydomonas reinhardtii	RAF89445.1	AF169018	Glycine max
CRA05081.1	AJ001903	Triticum turgidum subsp. durum	RAF04253.1	AF097651	Pisum sativum
CRA49358.1	U35831	Pisum sativum	RAF04193.1	AF053638	Pisum sativum
CRA53900.1	X76269	Pisum sativum	RAF57738.1	U89271	Tripsacum dactyloides
BRA13524.1	D87984	Fagopyrum esculentum	RAF04194.1	AF053639	Pisum sativum
CRA41415.1	X56527	Nicotiana tabacum	RAB00109.1	U21801	Lycopersicon esculentum
RAD49233.1	AF159388	Phalaris coarulescens	SEQ ID NO. 1259		
BAB39913.1	AF002912	Oryza sativa	RAC78466.1	AF053311	Zantedeschia aethiopica
RAD49230.1	AF159385	Hordeum bulbosum	CRA04142.1	AJ000508	Pisum sativum
RAD49234.1	AF159389	Phalaris coarulescens	CRA59895.1	AJ238745	Hordeum vulgare
RAD49232.1	AF159387	Lolium perenne	CRA59893.1	AJ238697	Hordeum vulgare
CRA55826.1	X51462	Spinacia oleracea	CAB96145.1	AJ250951	Mesembryanthemum crystallinum
CRA35827.1	X51463	Spinacia oleracea	BRA22194.1	D63425	Spinacia oleracea
CRA77847.1	Z11803	Nicotiana tabacum	BRA22194.1	X60219	Nicotiana glauca
RAD66954.1	AF196240	Secale cereale	BAB16430.1	AB041518	Nicotiana glauca
RAD49231.1	AF159386	Secale cereale	CRA75009.1	Y14707	Helianthus annuus
RAD33596.1	X1133127	Hevea brasiliensis	CRA75054.1	Y14762	Helianthus annuus
CRA55598.1	X78821	Chlamydomonas reinhardtii	RAB94892.1	AF037051	Lycopersicon esculentum
CRA56851.1	X08668	Chlamydomonas reinhardtii	CRA59894.1	Y14729	Gossypium hirsutum
CRA44209.1	X62335	Chlamydomonas reinhardtii	CRA74775.1	Y14729	Hordeum vulgare
CRA06736.1	AJ005840	Oryza sativa	RAB66330.1	AF014927	Helianthus annuus
CRA06735.1	AJ005840	Triticum aestivum	RAB66330.1	AF014927	Chlamydomonas reinhardtii
RAB53695.1	U59380	Brassica napus	RAB35394.1	AB009083	Chlamydomonas sp. W80
RAB45358.1	AF160870	Brassica napus	CRA75055.1	Y14763	Lycopersicon esculentum
RAB52409.1	U76831	Brassica napus	CRA09194.1	AJ010455	Triticum aestivum
CRA33082.1	X14959	Spinacia oleracea	CAB66331.1	AJ279669	Betula pendula
RAC19392.1	AF069314	Mesembryanthemum crystallinum	SEQ ID NO. 1261		
RAC19392.1	AF069314	Pisum sativum	RAB18669.1	U11716	Pisum sativum
CRA45098.1	X63537	Pisum sativum	RAD2555.1	AF115574	Pisum sativum
RAC49357.1	U59830	Brassica napus	AAA33662.1	M18250	Pisum sativum
RAC04671.1	AF018174	Brassica napus	SEQ ID NO. 1264		
SEQ ID NO. 1255			RAF04296.1	U90071	Mesembryanthemum crystallinum
CRA52213.1	X74115	Picea abies	RAB03131.1	D14044	Cucurbita sp.
RAC35342.1	AF072449	Ipomoea trifida	RAB34030.1	J03492	Spinacia oleracea
RAC35340.1	AF072447	Ipomoea trifida	RAB92143.1	AF022740	Oryza sativa
CRA11153.1	AJ223177	Nicotiana tabacum			
CRA11154.1	AJ223178	Nicotiana tabacum			

[illegible]

AAAF43496.1	AF131222	Lophopyrum elongatum	AAAF17409.1	U02607	Solanum tuberosum
AAAF1674.1	AF133947	Lophopyrum elongatum	BAH3369.1	X0748331	Phaseolus tetragonolobus
AAAF6214.1	AF220603	Lycopersicon esculentum	CAA301442.1	X07130	Solanum tuberosum
AAAF1568.1	AF318492	Lycopersicon hirsutum	AAH67842.1	U60197	Gossypium hirsutum
SEQ ID NO. 1271			AAH67842.1	Z78202	Persea americana
BRAS2826.1	AF023464	Arabis gemmifera	CAA34521.1	X64518	Nicotiana tabacum
AAAF69793.1	AF135153	Arabis parishii	CAA33517.1	X15494	Solanum tuberosum
AAAF69785.1	AF135145	Arabis lignifera	AAH41324.1	X15494	Nicotiana tabacum
AAAF69775.1	AF135135	Arabis drummondii	AAH41325.1	U63591	Medicago sativa
AAAF69777.1	AF135137	Arabis fecunda	AAAF3756.1	U83592	Medicago sativa
AAAF69783.1	AF135143	Arabis lemmonii	CAA71402.1	X10373	Phaseolus vulgaris
AAAF69772.1	AF135132	Arabis gunnisoniana	AAAF75196.1	X13786	Phaseolus truncatula
AAAF69780.1	AF135140	Arabis glabra	AAAF33263.1	S43926	Pisum sativum
AAAF69778.1	AF135138	Arabis glabra	AAAF33263.1	S43926	Phaseolus vulgaris
AAAF69784.1	AF135144	Arabis lemmonii	AAAF33263.1	S43926	Vigna sesquipedalis
AAAF69792.1	AF135152	Arabis parishii	AAAF33263.1	S43926	Vigna unguiculata
AAAF69786.1	M95835	Brassica napus	AAAF33263.1	S43926	Theobroma cacao
AAAF69788.1	AF135146	Arabis lyallii	AAAF33263.1	S43926	
AAAF69781.1	AF135148	Arabis lyallii	AAAF33263.1	S43926	
AAAF69770.1	AF135130	Arabis holboellii	AAAF33263.1	S43926	
AAAF69773.1	AF135133	Arabis holboellii	AAAF33263.1	S43926	
AAAF69789.1	AF135149	Arabis blepharophylla	AAAF33263.1	S43926	
AAAF69776.1	AF135136	Arabis microphylla	AAAF33263.1	S43926	
AAAF69791.1	AF135151	Arabis fecunda	AAAF33263.1	S43926	
AAAF69787.1	AF135147	Arabis lignifera	AAAF33263.1	S43926	
AAAF69790.1	AF135150	Arabis microphylla	AAAF33263.1	S43926	
AAAF69782.1	AF135142	Halimolobos perplexa var. perplexa	AAAF33263.1	S43926	
AAAF69774.1	AF135134	Arabis blepharophylla	AAAF33263.1	S43926	
AAAF5822.1	X64519	Nicotiana tabacum	AAAF33263.1	S43926	
CAA35945.1	X51599	Nicotiana tabacum	AAAF33263.1	S43926	
CAAF17793.1	AJ301671	Nicotiana glauca	AAAF33263.1	S43926	
CAA34813.1	X16939	Nicotiana tabacum	AAAF33263.1	S43926	
CAA34812.1	X16938	Nicotiana tabacum	AAAF33263.1	S43926	
AAAF23370.1	S44869	Nicotiana tabacum	AAAF33263.1	S43926	
AAAF34070.1	U15173	Nicotiana tabacum	AAAF33263.1	S43926	
AAAF18332.1	U02605	Solanum tuberosum	AAAF33263.1	S43926	
CAAF7845.1	Z15140	Lycopersicon esculentum	AAAF33263.1	S43926	
AAAF17408.1	U02606	Solanum tuberosum	AAAF33263.1	S43926	
AAAF17409.1	U02607	Solanum tuberosum	AAAF33263.1	S43926	
BAH3369.1	X0748331	Phaseolus tetragonolobus	AAAF33263.1	S43926	
CAA301442.1	X07130	Solanum tuberosum	AAAF33263.1	S43926	
AAH67842.1	U60197	Gossypium hirsutum	AAAF33263.1	S43926	
AAH67842.1	Z78202	Persea americana	AAAF33263.1	S43926	
CAA34521.1	X64518	Nicotiana tabacum	AAAF33263.1	S43926	
CAA33517.1	X15494	Solanum tuberosum	AAAF33263.1	S43926	
AAH41324.1	X15494	Nicotiana tabacum	AAAF33263.1	S43926	
AAH41325.1	U63591	Medicago sativa	AAAF33263.1	S43926	
AAAF3756.1	U83592	Medicago sativa	AAAF33263.1	S43926	
CAA71402.1	X10373	Phaseolus vulgaris	AAAF33263.1	S43926	
AAAF75196.1	X13786	Phaseolus truncatula	AAAF33263.1	S43926	
AAAF33263.1	S43926	Pisum sativum	AAAF33263.1	S43926	
AAAF33263.1	S43926	Phaseolus vulgaris	AAAF33263.1	S43926	
AAAF33263.1	S43926	Vigna sesquipedalis	AAAF33263.1	S43926	
AAAF33263.1	S43926	Vigna unguiculata	AAAF33263.1	S43926	
AAAF33263.1	S43926	Theobroma cacao	AAAF33263.1	S43926	
SEQ ID NO. 1272			AAAF33263.1	S43926	
CAAF57457.2	AJ249786	Nicotiana tabacum	AAAF33263.1	S43926	
AAAF57457.2	U82974	Citrus sinensis	AAAF33263.1	S43926	
SEQ ID NO. 1273			AAAF33263.1	S43926	
CAA40796.1	X57564	Amoracia rusticana	AAAF33263.1	S43926	
BAH08499.1	D49551	Oryza sativa	AAAF33263.1	S43926	
CAA66037.1	X97351	Populus balsamifera subsp. trichocarpa	AAAF33263.1	S43926	
BAH84764.1	D84400	Oryza sativa	AAAF33263.1	S43926	
CAA94692.1	AJ242742	Ipomoea batatas	AAAF33263.1	S43926	
BAH06335.1	D30653	Populus kitakamiensis	AAAF33263.1	S43926	
BAH1853.1	D83225	Populus nigra	AAAF33263.1	S43926	
AAAF37427.1	AF149277	Phaseolus vulgaris	AAAF33263.1	S43926	
AAAF37430.1	AF149280	Phaseolus vulgaris	AAAF33263.1	S43926	
AAAF1852.1	D63224	Populus nigra	AAAF33263.1	S43926	
CAA66035.1	X97349	Populus balsamifera subsp. trichocarpa	AAAF33263.1	S43926	
CAA66034.1	X97348	Populus balsamifera subsp. trichocarpa	AAAF33263.1	S43926	
AAAF7241.1	D38051	Populus kitakamiensis	AAAF33263.1	S43926	
BAH92500.1	AP001383	Oryza sativa	AAAF33263.1	S43926	
CAA50597.1	X71593	Lycopersicon esculentum	AAAF33263.1	S43926	
CAA57421.1	X19023	Lycopersicon esculentum	AAAF33263.1	S43926	

CRA66036.1	X97350	Populus balsamifera subsp.	AAA32657.1	M36100	Medicago sativa
trichocarpa			AAAC49843.1	U76030	Oryza sativa
ABA7602.1	L07554	Linum usitatissimum	AAAC31750.1	X13375	Medicago sativa
CRA62226.1	X90693	Medicago sativa	BAA31157.1	AB015721	Pisum sativum
AAA34108.1	J02979	Nicotiana tabacum	AAAB48005.1	M91077	Medicago sativa
CRA62227.1	X90694	Medicago sativa	AAAC3002.1	M23312	Sesbania rostrata
BAA06334.1	D30652	Populus kitakamiensis	BAA31156.1	AB015720	Pisum sativum
BA01992.1	D11396	Nicotiana tabacum	AAAC07676.1	AY026343	Lycopersicon esculentum
BA04356.1	BA0155124	Gossypium hirsutum	AAAC04853.1	U50083	Lupinus luteus
BAA2306.1	AB027752	Nicotiana tabacum	CMA37898.1	X53950	Casuarina glauca
CRA98519.1	AP007271	Glycine max	AAAB70097.1	U94968	Hordeum vulgare
BAA14143.1	D90115	Amoracia rusticana	CRA68462.1	Y00401	Lupinus luteus
AA014502	AF014502	Glycine max	AAAB7887.1	U07143	Glycine max
AA063027.1	AF244924	Spinacia oleracea	AAAF4664.1	AF236080	Zea mays
AA062225.1	X50692	Medicago sativa	AAAC49843.1	U76028	Oryza sativa
BAA01877.1	D11102	Populus kitakamiensis	AAAC49843.1	U76031	Oryza sativa
AA03026.1	AF244923	Spinacia oleracea	BAG01183.1	AF231052	Zea mays subsp. parviglumis
BAA14144.1	D90116	Amoracia rusticana	AAAB6653.1	U27194	Parasponia andersonii
BA041810.1	L36156	Medicago sativa	CMA68403.1	Y00296	Trema tomentosa
AA034050.1	N74103	Nicotiana sylvestris	AAAC03005.1	M23313	Sesbania rostrata
CRA62597.1	X91172	Raphanus sativus	AAAG01375.1	AF005818	Zea mays subsp. mays
BA02554.1	L37790	Stylosanthes humilis	CMA40900.1	X57733	Medicago truncatula
CRA76680.1	Y17192	Cucurbita pepo	CMA38024.1	X54089	Medicago sativa
CRA71492.1	Y10466	Spinacia oleracea	AAAG29748.1	AF172172	Medicago sativa
BAA94962.1	AB042103	Asparagus officinalis	AAAC28426.1	AF027215	Trema orientalis
BAA77389.1	AB024439	Scutellaria baicalensis	BRA24088.1	AB009844	Pisum sativum
AA037428.1	AF149278	Phaseolus vulgaris	CRA90869.1	Z54158	Vicia faba
BAA1811.1	L36157	Medicago sativa	CAB63706.1	AJ131349	Trema virgata
BAB06183.1	M37636	Arachis hypogaea	CAB63709.1	AJ131352	Trema virgata
			CNA90870.1	Z54159	Vicia faba
			CAB63707.1	AJ131350	Trema virgata
			CAB63708.1	AJ131351	Trema virgata
			CRA40899.1	X57732	Medicago truncatula
SEQ ID NO. 1274		Cichorium intybus x Cichorium			
CRA07547.1	AB007507	endivia	SEQ ID NO. 1275		
AAH33018.1	L28826	Casuarina glauca	CAC07206.1	AJ278966	Brassica napus
AAH18503.1	U09671	Canavalia lineata	AAAC01600.1	AF016713	Lycopersicon esculentum
CRA32044.1	X13815	Sesbania rostrata	AAAC20304.1	AF023472	Hordeum vulgare
CRA31859.1	X13505	Sesbania rostrata	AAAF20002.1	AF213936	Trinius dulcis
CNA32043.1	X13814	Sesbania rostrata	AAAF07875.1	AF140606	Oryza sativa
AAAC49882.1	U76029	Oryza sativa	BAB19757.1	AB052785	Glycine max
CNA32492.1	X14311	Pisum sativum			
BAA31155.1	AB015719				

CRA10372.1	AJ131455	Flaetid Solanum demissum	SEQ ID NO. 1288	Oryza sativa	SEQ ID NO. 1290	Oryza sativa
CRA50750.1	X71952	Capsicum annuum	AAB62693.1	AFO04947	BA942428.1	BA942428.1
			CRA73067.1	Y12464	BA942424.1	BA942424.1
			CRA73068.1	Y12465	BA942436.1	BA942436.1
			RAF22219.1	AF141378	BA942419.1	BA942419.1
			RAF63688.1	AB011967	BA942415.1	BA942415.1
			RAF34675.1	AB011670	BA942411.1	BA942411.1
			RAF33689.1	AB011670	BA942411.1	BA942411.1
			RAF36628.1	AF002482	BA942411.1	BA942411.1
			RAF05649.1	AF128443	BA942411.1	BA942411.1
			CRA71142.1	Y10036	BA942411.1	BA942411.1
			CRA65244.1	X93397	BA942411.1	BA942411.1
			CRA57898.1	X82548	BA942411.1	BA942411.1
			RAF99329.1	AF062479	BA942411.1	BA942411.1
			RAF05457.1	U55768	BA942411.1	BA942411.1
			RAF07813.1	AJ007990	BA942411.1	BA942411.1
			CRA46556.1	X55606	BA942411.1	BA942411.1
			CRA46554.1	X65604	BA942411.1	BA942411.1
			RAF00239.1	U73938	BA942411.1	BA942411.1
			RAF13608.1	D88399	BA942411.1	BA942411.1
			RAF60195.1	AC084763	BA942411.1	BA942411.1
			RAF19573.1	AB002109	BA942411.1	BA942411.1
			RAF68962.1	L38855	BA942411.1	BA942411.1
			CRA69202.1	Z49233	BA942411.1	BA942411.1
			RAF58348.1	U729095	BA942411.1	BA942411.1
			RAF00240.1	U73939	BA942411.1	BA942411.1
			CRA06503.1	AJ005373	BA942411.1	BA942411.1
			RAF27340.1	AF186020	BA942411.1	BA942411.1
			CRA96325.1	AF94726	BA942411.1	BA942411.1
			CRA81143.1	Z26846	BA942411.1	BA942411.1
			RAF21062.1	AF216527	BA942411.1	BA942411.1

CAB52690.1	AJ132225	Lycopersicon esculentum	CAB93959.1	AJ289701	Vicia faba
ARD50504.1	AF173655	Beta vulgaris	BAB32777.1	AF012044	Raphanus sativus
SEQ ID NO. 1293			ADG23179.1	AF293050	Brassica oleracea
CRA78388.1	213998	Petunia x hybrida	BAZ23180.1	AF293051	Brassica oleracea
CRA78387.1	213997	Petunia x hybrida	BAZ22586.1	AB030695	Raphanus sativus
CRA78386.1	213996	Petunia x hybrida	BAZ64896.1	X95640	Brassica oleracea
SEQ ID NO. 1294			BAF65846.1	AF255796	Allium cepa
AAK13395.1	AF283006	Oryza sativa	SEQ ID NO. 1300		
BAH18207.1	U73216	Triticum aestivum	AAK39318.1	AF029858	Sorghum bicolor
SEQ ID NO. 1296			AAAL19701.1	L24438	Thlaspi arvense
BAK92260.1	AF030697	Raphanus sativus	EAB03724.1	AB037245	Asparagus officinalis
ADP39374.1	AF118383	Brassica napus	BAB40324.1	AB037245	Asparagus officinalis
BAK92261.1	AF030698	Raphanus sativus	AAA32913.1	X32885	Persea americana
ADP39373.1	AF118382	Brassica napus	BAK94569.1	AF022460	Glycine max
BAK32778.1	AB012045	Raphanus sativus	AAK94588.1	AF022459	Glycine max
ACG17529.1	AF067185	Sesamea saman	CAK70575.1	Y09423	Nepeta racemosa
AAK26758.1	AF326491	Zea mays	ADK47832.1	AF166332	Nicotiana tabacum
BAK40441.1	AF326491	Pyrus communis	CAB56503.1	AF1238612	Catharanthus roseus
BAK7868.1	U60147	Beta vulgaris	BAF27282.1	AF122821	Capsicum annuum
AAK26761.1	AF326494	Zea mays	BAK94584.1	AF0292157	Glycine max
AAK26760.1	AF326493	Zea mays	BAK03638.1	DI4990	Solanum melongena
BAK40143.1	AF038680	Pyrus communis	CAK50645.1	X71634	Solanum melongena
AAK26759.1	AF326492	Zea mays	CAK50312.1	X70981	Solanum melongena
ADK28761.1	AF130975	Zea mays	CAK70576.1	Y09424	Nepeta racemosa
AAK65845.1	AF255795	Allium cepa	BAB40322.1	AB036772	Triticum aestivum
AAK26763.1	AF326496	Zea mays	ADK44152.1	AF124817	Mentha x piperita
AAK16545.1	AF062393	Oryza sativa	ADK44150.1	AF124816	Mentha x piperita
CAB46351.1	Y18312	Solanum tuberosum	CAK43941.1	X33875	Mentha spicata
AAK26762.1	AF326495	Zea mays	ADK56282.1	AF155332	Petunia x hybrida
AAK32107.1	AF051202	Picea mariana	AAK44132.1	AF218296	Pisum sativum
AAK66991.1	U18403	Atriplex canescens	CAC27827.1	AF295719	Catharanthus roseus
AAK30607.1	AF314656	Brassica oleracea	ADK37433.1	AF150881	Lycopersicon esculentum x
AAK99274.1	L77969	Spinacia oleracea	LYCOPERSICON PERUVIANUM		
CAB07783.1	Z93764	Picea abies	AGL14963.1	AF214009	Brassica napus
BAK02208.1	AF290201	Solanum chacoense	CRA57424.2	X81830	Zea mays
AAK71669.1	U60148	Beta vulgaris	CAK72207.1	V11403	Zea mays
AAK61463.1	AF139814	Triticum aestivum	CAB65580.1	X96784	Nicotiana tabacum
AAK78062.1	AF266760	Vicia faba	AGL14962.1	AF214008	Brassica napus
			AGL44361.1	AF214007	Brassica napus

AA06689.1	U15933	Nicotiana tabacum	BAA33203.1	AB001885	Oryza sativa
CA04406.1	Z34934	Zea mays	BAA33204.1	AB001886	Oryza sativa
CA03992.1	X62077	Pisum sativum	BAA33205.1	AB001887	Oryza sativa
AA03645.1	M93051	Pisum sativum	AA052384	AF052384	Maltus x domestica
AA01221.1	U56634	Glycine max	AA052385	AF052385	Raphanus sativus
BA02889.1	AB033297	Oryza sativa	AA052386	AF052386	Brassica napus
CA02247.1	Y11461	Brassica napus	AA052387	AF052387	Brassica napus
BA01766.1	AB050724	Oryza sativa subsp. japonica	AA052388	AF052388	Brassica napus
BA02022.1	AF127804	Glycine max	AA052389	AF052389	Brassica napus
AA04927.1	AF038839	Brassica juncea	AA052390	AF052390	Brassica napus
SEQ ID NO. 1304			SEQ ID NO. 1307		
BA097124.1	AB016266	Nicotiana sylvestris	AA052391	AF052391	Brassica napus
BA097125.1	AB016267	Nicotiana sylvestris	AA052392	AF052392	Brassica napus
BA097126.1	AB035270	Matricaria chamomilla	AA052393	AF052393	Brassica napus
AA050047.1	U89255	Lycopersicon esculentum	AA052394	AF052394	Brassica napus
BA07321.1	D38123	Nicotiana tabacum	AA052395	AF052395	Brassica napus
AA049740.1	U89256	Lycopersicon esculentum	AA052396	AF052396	Brassica napus
AA042619.1	AF057373	Nicotiana tabacum	AA052397	AF052397	Brassica napus
CB096890.1	AJ251249	Catharanthus roseus	AA052398	AF052398	Brassica napus
AA056800.1	AJ251250	Catharanthus roseus	AA052399	AF052399	Brassica napus
AA038748.1	U81157	Nicotiana tabacum	AA052400	AF052400	Brassica napus
AA05606.1	AF190770	Oryza sativa	AA052401	AF052401	Brassica napus
AA029316.1	U77655	Solanum tuberosum	AA052402	AF052402	Brassica napus
BA037183	AB037183	Oryza sativa	AA052403	AF052403	Brassica napus
BA037184.1	AB016285	Nicotiana sylvestris	AA052404	AF052404	Brassica napus
BA076734.1	AB024575	Nicotiana tabacum	AA052405	AF052405	Brassica napus
AA020708.1	U91857	Syosanthus hamata	AA052406	AF052406	Brassica napus
AA049741.1	U89257	Lycopersicon esculentum	AA052407	AF052407	Brassica napus
AA045623.1	AF084185	Brassica napus	AA052408	AF052408	Brassica napus
AA059619.1	AF243384	Oryza sativa	AA052409	AF052409	Brassica napus
AA01089.1	AF298231	Hordeum vulgare	AA052410	AF052410	Brassica napus
SEQ ID NO. 1305			SEQ ID NO. 1308		
AA017172.1	AF190881	Populus tremula x Populus tremuloides	AA052411	AF052411	Brassica napus
CA024691.1	AJ132363	Brassica juncea	AA052412	AF052412	Brassica napus
AA039514.1	AF056027	Oryza sativa	AA052413	AF052413	Brassica napus
SEQ ID NO. 1306			SEQ ID NO. 1309		
BA033201.1	AB001883	Oryza sativa	AA052414	AF052414	Brassica napus

[illegible]

RAAF61440.1	AF138264	Ipomoea batatas	RAAC14577.1	U72396	Lycopersicon esculentum
RAAF61442.1	AF138266	Ipomoea batatas	RAAC60520.1	X95716	Petroselinum crispum
RAAF61441.1	AF138265	Ipomoea batatas	RAAC39336.1	M99430	Ipomoea nil
RAAD29084.1	AF092181	Solanum melongena	RAA33670.1	M33901	Pisum sativum
RAK27969.1	AF242373	Ipomoea batatas	RAAD14409.1	AF159562	Prunus dulcis
RAAO8906.1	AF009878	Cicer arietinum	RAAF67206.1	X98617	Medicago sativa
CA878403.1	Z14028	Lycopersicon esculentum	RAAC36312.1	AF090115	Lycopersicon esculentum
CA817075.1	Z99953	Phaseolus vulgaris	CAAC38012.1	X54075	Zea mays
BA92495.1	AB038598	Vigna mungo	CAAC38013.1	X54076	Zea mays
RAAF67878.1	U59465	Vicia faba	CAAA1218.1	X58279	Triticum aestivum
CAAC82995.1	Z30338	Vicia sativa	RAAB26481.1	X59777	Zea mays
BA08244.1	D45402	Zea mays	RAAB01561.1	L47717	Picea glauca
CA817077.1	Z99955	Phaseolus vulgaris	RAAB39335.1	M99429	Ipomoea nil
CA816316.1	Z99172	Vicia sativa	RAAB01562.1	L47740	Picea glauca
CA836373.1	Z32795	Glycine max	CAAF67726.1	X99346	Picea abies
CA853397.1	AJ245868	Medicago sativa	RAAD09184.1	AF089845	Funaria hygrometrica
RAAB22937.1	AF007215	Lavatera thuringiaca	RAAD04841.1	D21817	Lilium longiflorum
CA857675.1	X82185	Zea mays	RAAD04842.1	D21818	Lilium longiflorum
BA96501.1	AB032168	Nicotiana tabacum	RAAD09184.1	AF089846	Funaria hygrometrica
CA817076.1	Z99954	Phaseolus vulgaris	BAAC44840.1	D21816	Lilium longiflorum
RAAB68374.1	U52370	Phaseolus vulgaris	CAAC3570.1	X52863	Pseudotsuga menziesii
CA812118.1	AJ224766	Phaseolus vulgaris	CAAC3571.1	X52984	Pseudotsuga menziesii
RAAD48496.1	AF172856	Phaseolus vulgaris	RAAD30452.1	AF123255	Lycopersicon esculentum
CA817074.1	Z99952	Phaseolus vulgaris	RAAD09178.1	AF087640	Funaria hygrometrica
CAAO5894.1	AF003137	Lycopersicon esculentum	RAAB63311.1	U46545	Helianthus annuus
RAAD53012.1	AF089849	Brassica napus	CAAC39603.1	X56138	Lycopersicon esculentum
CA853515.1	AJ245924	Solanum tuberosum	RAAC33672.1	U63631	Lycopersicon esculentum
CA883629.1	Z48736	Lycopersicon esculentum	RAAD30454.1	AF123257	Medicago sativa
RAAC49455.1	U41902	Pseudotsuga menziesii	CAAA1547.1	X58711	Triticum aestivum
CA870820.2	AF019145	Zea mays	CAAC1785.1	X13431	Oryza sativa
CA816317.1	Z99173	Nicotiana tabacum	RAAC39856.1	U81385	Medicago sativa
RAAF67968.1	AF242372	Ipomoea batatas	CAAA1546.1	X58710	Pennisetum glaucum
BAAB6898.1	AB020961	Zea mays	RAAC33910.1	X94191	Oryza sativa
RAAD53011.1	AF089848	Brassica napus	CAAC33909.1	M80938	Oryza sativa
RAAF79915.1	U17135	Dianthus caryophyllus	CAAC33210.1	X08020	Oryza sativa
RAAB82663.1	AF019147	Zea mays	RAAB30397.1	U21723	Glycine max
RAAB97142.1	U53166	Prunus americana	RAAC78394.1	U83671	Oryza sativa
RAAC35211.1	U12657	Hemerocallis hybrid cultivar	RAAC78392.1	U83669	Oryza sativa
SEQ ID NO. 1325		Helianthus annuus			
CAAC82653.1	Z29554				

AAA3273.1	L35152	Dianthus caryophyllus	BRAB354.1	AF000399	Oryza sativa
CAA41212.1	X58273	Lycopersicon esculentum	CAA53192.1	X75440	Chlorella kessleri
BAA34924.1	A901301	Lycopersicon esculentum	CRA68813.1	X07520	Chlorella kessleri
BAF65472.1	AF252628	Brassica juncea	CAA39036.1	X55349	Chlorella kessleri
BAB32502.1	AB044747	Phyllostachys edulis	BAB19862.1	AB052883	Oryza sativa
CAA71140.1	Y10034	Rumex palustris	BAB2688.1	AF132223	Lycopersicon esculentum
CAA68538.1	Y00478	Rumex palustris	BAF52688.1	AF173655	Beta vulgaris
AAB71421.1	L29405	Helianthus annuus	BAF52688.1	AF173655	Lycopersicon esculentum
BAF98808.1	U68215	Carica papaya	BAF43998.1	AF132225	Lycopersicon esculentum
CAA58232.1	X32229	Nicotiana tabacum	BAF43998.1	AF154837	Apium graveolens var. dulce
CAA96468.1	246349	Nicotiana tabacum	BAF4567.1	AF215854	Zea mays
AAA99793.1	U54566	Nicotiana glauca	BAF4567.1	AF215853	Solanum tuberosum
AAA33697.1	L21978	Petunia x hybrida	BAF4566.1	AF215852	Nicotiana glauca
BAF64528.1	AF254125	Carica papaya	BAF4565.1	AF215851	Spinacia oleracea
AAA33644.1	M98357	Pisum sativum	BAF37424.1	AF149282	Phaseolus vulgaris
AAA99792.1	U54565	Nicotiana glauca	BAF45334.1	AF168773	Betula pendula
BAF97368.1	AF041479	Rumex palustris	SEQ ID NO. 1368		
BAF33378.1	RE006807	Cucumis sativus	BAF20002.1	AF213936	Prunus dulcis
BAF05171.1	U62764	Nicotiana glauca	BAF01600.1	AF016713	Lycopersicon esculentum
BAF59749.1	X85747	Oryza sativa	BAF32034.1	AF023472	Hordeum vulgare
BAF06526.1	D31727	Cucumis melo	BAF07875.1	AF140606	Oryza sativa
			BAF07206.1	AF278966	Brassica napus
			BAF69642.1	AF000392	Lotus japonicus
			BAF19760.1	AF052788	Glycine max
			BAF93316.1	Z69370	Cucumis sativus
			BAF19757.1	AF052785	Glycine max
			BAF19756.1	AF052784	Glycine max
			BAF16016.1	AF080545	Nepenthes alata
			BAF42860.1	AF154930	Prunus dulcis
			SEQ ID NO. 1370		
			BAF19760.1	AF052788	Glycine max
			BAF19757.1	AF052785	Glycine max
			BAF19756.1	AF052784	Glycine max
			BAF01600.1	AF016713	Lycopersicon esculentum
			BAF32034.1	AF023472	Hordeum vulgare
			BAF93316.1	Z69370	Cucumis sativus
			BAF20002.1	AF213936	Prunus dulcis
			BAF07875.1	AF140606	Oryza sativa
			BAF69642.1	AF000392	Lotus japonicus
			BAF42860.1	AF154930	Prunus dulcis
			SEQ ID NO. 1365		
			BAF52688.1	AF132224	Lycopersicon esculentum
			CAA09419.1	AJ010942	Oryza sativa
			BAF19864.1	AF052685	Nicotiana tabacum
			CAA47324.1	X66856	Medicago truncatula
			BAF06594.1	U38651	Ricinus communis
			BAF39761.1	L08196	Vitis vinifera
			CAA04511.1	AJ001061	Vitis vinifera
			CAA70777.1	Y09590	Ricinus communis
			AAH79857.1	L08188	Picea abies
			BAF06079.1	Z83829	Oryza sativa
			BAF19863.1	AB052884	Oryza sativa

AD16016.1	AF080545	Nepenthes alata	RAC62296.1	AF050756	Ricinus communis
AD24260.1	AF154930	Prunus dulcis	RAC5331.1	UI2637	Hemera callis hybrid cultiv
			RAD10337.1	U94891	Hordium vulgare
			AF133839		Sandersonia aurantiaca
			RAC09699.1	Z57023	Hordium vulgare
			RAC09699.1	Z57021	Hordium vulgare
			RAC56844.1	X80876	Oryza sativa
			AF004648		Oryza sativa
			RAC3472.1	U50447	Phalaenopsis sp. SM9108
			RAC3723.1	Z54747	Zinnia elegans
			RAC49406.1	UI9267	Pistia sativum
			RAC06243.1	AF004958	Ipomoea batatas
			RAC27968.1	AF242372	Oryza sativa
			RAC3473.1	AF004819	Oryza sativa
			RAC1170.1	D76415	Oryza sativa
			RAC84378.1	Z34895	Vicia sativa
			SEQ ID NO. 1373		
			RAC39318.1	AF029858	Sorghum bicolor
			RAC40323.1	AF037244	Asparagus officinalis
			RAC32913.1	M32885	Persea americana
			RAC40324.1	AF037245	Asparagus officinalis
			RAC19701.1	L24438	Thlaspi arvense
			RAC94589.1	AF022460	Glycine max
			RAC94588.1	AF022459	Glycine max
			RAC70375.1	I09423	Nepeta racemosa
			RAC47832.1	AF166332	Nicotiana tabacum
			RAC94584.1	AF022157	Glycine max
			RAF27282.1	AF122821	Capsicum annuum
			RAC50312.1	X70981	Solanum melongena
			RAC56503.1	AJ238612	Solanum melongena
			RAC50645.1	X71654	Catharanthus roseus
			RAC03635.1	D14990	Solanum melongena
			RAC44151.1	AF124816	Mentha x piperita
			RAC44152.1	AF124817	Mentha x piperita
			RAC3941.1	Z33875	Mentha x piperita
			RAC44150.1	AF124815	Mentha spicata
			RAC40322.1	AF036772	Triticum aestivum
			RAC74827.1	AJ295719	Catharanthus roseus
			RAC441332.1	AF218296	Pistia sativum
			RAC56282.1	AF155332	Petunia x hybrida
			RAC14563.1	AF214009	Brassica napus
			SEQ ID NO. 1372		
			RAC48496.1	AF172856	Lycopersicon esculentum
			RAC49455.1	U61902	Pseudotsuga menziesii
			RAC33515.1	AJ245924	Solanum tuberosum
			RAC17076.1	Z99954	Phaseolus vulgaris
			RAC88598.1	AF020961	Zea mays
			RAC46863.1	X66061	Pistia sativum
			RAC88263.1	AF019147	Zea mays
			RAC05894.1	AJ003137	Lycopersicon esculentum
			RAC79915.1	U17135	Dianthus caryophyllus
			RAC28476.1	AF133838	Sandersonia aurantiaca
			RAC88262.1	AF019146	Zea mays
			RAC53377.1	X75749	Vicia sativa
			RAC16317.1	Z99173	Nicotiana tabacum
			RAC17074.1	Z99952	Phaseolus vulgaris
			RAC12118.1	AJ224766	Phaseolus vulgaris
			RAC68374.1	U52970	Phaseolus vulgaris
			RAC57538.1	X82011	Cicer arietinum
			RAC41816.1	U44947	Pistia sativum
			RAC54424.1	AF182079	Matricaria chamomilla
			RAC06862.1	AF343446	Andropogon chinensis
			RAC52425.1	X74406	Hemera callis sp.
			RAC70820.2	AF019145	Zea mays

CACI0270.1	AJ243427	Malus x domestica	CAAL2118.1	AJ224766	Phaseolus vulgaris
ABN95118.1	U71244	Brassica rapa	CAB17074.1	Z99552	Phaseolus vulgaris
CHC03477.1	AL42113	Oryza sativa	RA048496.1	AJ172856	Lycopersicon esculentum
CHB21567.1	AJ242828	Castanea sativa	RA053012.1	AF089849	Brassica napus
ANF06346.1	AJ195653	Vitis vinifera	CA0505894.1	AU003137	Lycopersicon esculentum
RA002259.1	U57787	Avena sativa	BA0808245.1	B45403	Zea mays
RA055090.1	AF178653	Vitis riparia	BA088898.1	AB020961	Zea mays
CA010492.1	AJ131731	Pseudotsuga menziesii	CAB16317.1	Z99173	Nicotiana tabacum
CRA09228.1	AJ010501	Cicer arietinum	AA088263.1	AF019147	Zea mays
RA095165.1	AB029918	Nicotiana tabacum	CA02583.1	Z68291	Pisum sativum
AF02264.1	AF227324	Vitis vinifera	CMA68192.1	X99936	Zea mays
AA053368.1	U77657	Oryza sativa	AAC35211.1	U12637	Hemerocallis hybrid cultivar
RA061590.1	AF003007	Vitis vinifera	AB07142.1	U93166	Prunus amniaca
AB053367.1	U77656	Oryza sativa	SEQ ID NO. 1387		
			AAA33967.1	M76981	Glycine max
		Ipomoea batatas	BA023563.1	D50094	Phaseolus vulgaris
		Ipomoea batatas	RA019152.1	AB000585	Phaseolus vulgaris
		Ipomoea batatas	CA034020.1	M20037	Glycine max
		Ipomoea batatas	AAA34022.1	M76980	Glycine max
		Phaseolus vulgaris	AAA34021.1	M20038	Glycine max
		Vicia faba	SEQ ID NO. 1390		
		Cicer arietinum	BA07043.1	AB035183	Ipomoea batatas
		Vicia sativa	CAB06427.1	Z84383	Dianthus caryophyllus
		Vigna mungo	CA006429.1	Z84385	Dianthus caryophyllus
		Solanum melongena	CAB06430.1	Z84386	Dianthus caryophyllus
		Lycopersicon esculentum	CAB11466.1	Z98758	Dianthus caryophyllus
		Zea mays	CA06538.1	Z84571	Dianthus caryophyllus
		Glycine max	CAB06428.1	Z84384	Dianthus caryophyllus
		Phaseolus vulgaris	SEQ ID NO. 1391		
		Vicia sativa	AA001360.1	AF314811	Brassica napus
		Medicago sativa	CAB40834.1	AJ005686	Vitis vinifera
		Lavatera thuringiaca	RA014481.1	U92286	Actinidia deliciosa
		Nicotiana tabacum	CA067875.1	U60267	Lycopersicon esculentum
		Zea mays	CA067069.1	X98421	Medicago sativa
		Pseudotsuga menziesii	AA001361.1	AF314812	Brassica napus
		Phaseolus vulgaris	RA019361.1	D49714	Oryza sativa
		Brassica napus	RA018862.1	AF067967	Mesembryanthemum crystallinum
		Lycopersicon esculentum	CA057070.1	X98422	Medicago sativa
		Ipomoea batatas			
		Phaseolus vulgaris			

AAC34137.1	AF101424	Cichorium intybus	SEQ ID NO. 1404	SEQ ID NO. 1405	Glycine max
AMB90946.1	AF022914	Triticum aestivum	BAF71227.1	AF004809	Sesamum indicum
			AF13743.1	AF109921	Oryza sativa
			CAA61981.1	X89891	
SEQ ID NO. 1392					
AD110836.1	US2079	Solanum tuberosum	SEQ ID NO. 1400	SEQ ID NO. 1405	
SEQ ID NO. 1400					
BAA05648.1	D26601	Nicotiana tabacum	AD10327.1	UG3534	Fragaria x ananassa
BAF34436.1	AF172282	Oryza sativa	BAF38509.1	AF320110	Fragaria x ananassa
CAA08095.1	AF010091	Brassica napus	BAF38503.1	U79770	Mesembryanthemum crystallinum
CAA08095.1	AF010093	Brassica napus	CAA08028.1	X67817	Petroselinum crispum
BAF19402.1	AF203480	Lycopersicon esculentum	AAAC15467.1	U24561	Apium graveolens
BAF19403.1	AF203481	Lycopersicon esculentum	AAAC15854.1	AF067082	Apium graveolens
BAF70706.1	U82087	Tortula ruralis	AAAC35846.1	AF083333	Medicago sativa
BAF19401.1	AF203479	Glycine max	AAAC74883.1	L36456	Stylosanthes humilis
BAF85396.1	AF000615	Oryza sativa	AAAC74882.1	L36823	Stylosanthes humilis
BAF05270.1	AF048691	Oryza sativa	BAF72100.1	AF146591	Lycopersicon esculentum
BAF06070.1	AF162662	Kalanchoe fedtschenkoi	CAA06072.1	Z37991	Pinus taeda
BAF06069.1	AF162661	Kalanchoe fedtschenkoi	CAA05097.1	AJ001826	Picea abies
CAH57136.1	X61393	Oryza sativa	CAA05096.1	AJ001825	Picea abies
BAF80692.1	U69173	Glycine max	CAA05095.1	AJ001824	Picea abies
BAF21062.1	AE216327	Dunaliella tertiolecta	CAH51226.1	X72675	Picea abies
BAF96626.1	AF002482	Oryza sativa	CAH58774.1	U62394	Pinus radiata
BAF53979.1	AF325168	Nicotiana tabacum	CAH51166.1	AF060491	Pinus radiata
BAF1750.1	AB017516	Marchantia polymorpha	CAH66073.1	Z37992	Pinus taeda
BAF1748.1	AB017515	Marchantia polymorpha	AAK00679.1	AF229407	Brassica napus
CAH99202.1	Z49233	Chlamydomonas eugametos	AAK00681.1	AF229409	Brassica napus
AAA33443.1	L15390	Zea mays	CAH44216.1	X62343	Nicotiana tabacum
BAF1749.1	AB017515	Marchantia polymorpha	CAH44217.1	X62344	Nicotiana tabacum
BAF1751.1	AB017517	Marchantia polymorpha	AAK00682.1	AF229410	Brassica oleracea
CAAC49405.1	U08140	Vigna radiata	AAK07987.1	AF038561	Encalyptus globulus
AD00202.1	U73938	Nicotiana tabacum	BAAC03099.1	D13991	Aralia cordata
AD00240.1	AF090835	Mesembryanthemum crystallinum	CAH46585.1	X65631	Encalyptus gunnii
BAF49984.1	U90262	Cucurbita pepo	AAK00678.1	AF229406	Brassica napus
BAF05112.1	AF158091	Mesembryanthemum crystallinum	BAF15553.1	AF294793	Eucalyptus saligna
BAF27340.1	AF186020	Vicia faba	BAF43140.1	AF217957	Populus tremuloides
CAH46524.1	X35997	Solanum tuberosum	CAAC07423.1	AA295937	Populus balsamifera subsp.
CAH49036.1	X35869	Daucus carota	trichocarpa		
CAH0748.1	AA007366	Zea mays	CAH79622.1	Z19568	Populus deltoides
			AAK00684.1	AF229412	Brassica rapa
			BAF70906.1	AF010290	Lolium perenne

CRAS3211.1	X75480	Eucalyptus gunnii	CRAG1589.1	X89409	Lotus japonicus
RAK00680.1	AF229408	Brassica napus	CRAG7889.1	X99552	Asparagus officinalis
CRAY4070.1	Y13733	Zea mays	RAAF7455.1	AF263432	Hellanthus annuus
RAK00683.1	AF229411	Brassica rapa	RAAD0503.1	AF014057	Triphysaria versicolor
CRAY7925.1	Z19573	Medicago sativa	RAAD0503.1	AF014056	Triphysaria versicolor
RAK00684.1	AF083332	Medicago sativa	CRAG6526.1	AF014055	Triphysaria versicolor
CRAY06687.1	AJ005702	Zea mays	CRAG6526.1	Z72354	Vicia faba
CRAL1377.1	AJ231135	Saccharum officinarum	CRAG4814.1	X67958	Asparagus officinalis
BRAL19487.1	D86590	Zinnia elegans	CRAG1590.1	X89410	Lotus japonicus
RAAD04046.1	D16624	Eucalyptus globulus	CRAG36429.1	X52179	Pisum sativum
RAAD18000.1	AF109157	Eucalyptus botryoides	RAA96252.1	AF035248	Astragalus sinicus
RAAF23409.1	AF207552	Brassica napus	CRAG36430.1	X52180	Pisum sativum
RAAF23411.1	AF207554	Brassica oleracea	RAA96251.1	AF035247	Astragalus sinicus
RAAF23412.1	AF207555	Brassica rapa	CRAG57292.1	AJ133522	Phaseolus vulgaris
RAAF23410.1	AF207553	Brassica napus	RAAC49614.1	U77679	Glycine max
RAAF23416.1	AF207559	Brassica rapa	BRAL18951.1	D93378	Oryza sativa
RAAF23415.1	AF207558	Brassica oleracea	RAA03991.1	D55073	Oryza sativa
SEQ ID NO. 1412			RAA02776.1	AF180729	Hellanthus annuus
RAK14395.1	AF339732	Dianthus caryophyllus	RAA71332.1	X82849	Sandersonia aurantiaca
RAE20580.1	AF042267	Zea mays	CRAG8052.1	X82849	Zea mays
RAE20581.1	AF042268	Zea mays	RAA91481.1	AF037363	Hellanthus annuus
RAE20579.1	AF042261	Zea mays	CRAY73762.1	Y13321	Pisum sativum
RAE17300.1	AF042260	Zea mays	CRAY73763.1	Y13322	Pisum sativum
RAE2873.1	AF042291	Zea mays	RAA96452.1	AF021793	Pyrus pyrifolia
BRAG2873.1	AF042291	Zea mays	RAA73943.1	L23833	Glycine max
RAE85113.1	AF031012	Zea mays	SEQ ID NO. 1415		
RAA75253.1	AF040882	Zea mays	ANG21985.1	AF271636	Zea mays
RAE85112.1	AF031011	Zea mays	RAAC18622.2	AF003551	Zea mays
RAE20582.1	AF042269	Zea mays	RAAG28387.1	AF191667	Brassica oleracea
RAA41137.1	AF060130	Zea mays	RAAG28386.1	AF191666	Brassica napus
SEQ ID NO. 1414			RAAG7685.1	AF042184	Brassica napus
BRAL17726.1	AF050900	Raphanus sativus	RAAG1462.1	AF293461	Brassica napus
CRAG59138.1	X84448	Brassica oleracea	SEQ ID NO. 1417		
RAK16325.1	AF061740	Elaeagnus umbellata	RAAG03379.1	U27108	Brassica napus
CRAG08913.1	AJ009952	Phaseolus vulgaris	RAAG03378.1	U27107	Brassica napus
RAAF20775.1	AF190728	Hellanthus annuus	RAAD2937.1	AF084971	Catharanthus roseus
RAAC49613.1	U77678	Glycine max	RAAC49474.1	U41817	Phaseolus vulgaris
RAE85101.1	U99923	Medicago sativa	CRAL1499.1	AJ223624	Spinacia oleracea
RAE85101.1	U55874	Glycine max	CRAG8492.1	Z48602	Nicotiana tabacum
RAE848058.1	L40327	Medicago sativa			

AA040398.1	U46217	Petroselinum crispum	AA032990.1	X87514	Brassica oleracea
CA076555.1	Y16553	Sinapis alba	CA050575.1	X71441	Nicotiana tabacum
CA086493.1	Z48603	Nicotiana tabacum	CA053566.1	X73670	Oryza sativa
CA03073.1	X32102	Raphanus sativus	AA04702.1	AA001369	Olea europaea
CA038772.1	X83920	Brassica napus	AA02621.1	I22209	Cuscuta reflexa
AA000098.1	L01449	Glycine max	CA049701.1	U79011	Borago officinalis
AA001169.1	U10270	Zea mays	CA056318.1	X80008	Nicotiana tabacum
AA034029.1	U04208	Oryza sativa	CA048240.1	X86140	Nicotiana tabacum
CA049556.1	U04295	Oryza sativa	AA010774.1	AF098510	Petunia x hybrida
CA058774.1	X83922	Brassica napus	AF060299.1	AF233640	Petunia x hybrida
AA042938.1	AF084972	Catharanthus roseus	CA011033.1	AJ222981	Physcomitrella patens
AA036514.1	U57389	Phaseolus vulgaris	SEQ ID NO. 1433		
CA000656.1	AJ292743	Petroselinum crispum	BA019675.1	D49486	Solidago canadensis
CA071768.1	Y10809	Petroselinum crispum	CA039819.1	X56435	Pisum sativum
CA071770.1	Y10810	Petroselinum crispum	CA033688.1	J04087	Pisum sativum
BA002304.1	D12920	Triticum aestivum	BA001088.1	D10244	Spinacia oleracea
CA040101.1	X56781	Triticum aestivum	CA032200.1	X14041	Lycopersicon esculentum
CA007269.1	D38111	Triticum aestivum	AA034195.1	X37151	Lycopersicon esculentum
AA034293.1	D28704	Triticum aestivum	BA021760.1	AB026724	Oryza sativa
AA014790.1	AY027510	Catharanthus roseus	BA012745.1	D95239	Oryza sativa
CA038773.1	X33921	Brassica napus	AA033728.1	M20792	Petunia x hybrida
CA02897.1	X74943	Lycopersicon esculentum	AA067990.1	U93536	Chloroplast triticum aestivum
CA062402.1	Y15165	Zea mays	AA067991.1	U93532	Triticum aestivum
BA010928.1	D64051	Triticum aestivum	CA008382.1	AF054151	Zantedeschia aethiopica
CA052896.1	X74942	Lycopersicon esculentum	CA041455.1	X58579	Pisum sylvestris
AA01488.1	U07933	Triticum aestivum	BA024919.1	AB004870	Marchantia paleacea
CA066477.1	X37903	Vicia faba	CA033619.1	M63003	Pisum sativum
CA052895.1	X74941	Lycopersicon esculentum	CA025568.1	AF071112	Brassica rapa subsp. pekinensis
BA002303.2	D12919	Triticum aestivum	BA07572.1	AF034630	Penax ginseng
AA058429.1	M63999	Triticum aestivum	CA010160.1	AJ012739	Cicer arletinum
CA067298.1	X98747	Hordeum vulgare	CA010132.1	AJ012691	Cicer arletinum
AA019103.1	U10466	Triticum aestivum	CA057992.1	X17565	Zea mays
CA036492.1	AB021736	Oryza sativa	CA041454.1	X58578	Pisum sylvestris
BA011431.1	D78609	Oryza sativa	AA040394.1	U90069	Mesembryanthemum crystallinum
SEQ ID NO. 1425			CA060826.1	X87372	Lycopersicon esculentum
CA073333.1	Y12805	Nicotiana tabacum	BA092612.1	AF037359	Oryza sativa
CA009420.1	AJ010943	Lycopersicon esculentum	CA033917.1	L36320	Paulownia kawakami
SEQ ID NO. 1428			CA073929.1	Y13610	Oryza sativa
CA004703.1	AJ001370	Olea europaea	CA037866.1	X53872	Spinacia oleracea
			AA014464.1	L19435	Oryza sativa

[illegible]

[illegible]

U77275	AA827255.1	Oryza longistaminata	SEQ ID NO. 1481	AAK25768.1	AF0336307	Malus x domestica
U77276	AA852992.1	Ipomoea nil	AAK37387.1	L44142	Fragaria x ananassa	
U77274	AA882756.1	Oryza sativa	AAK36676.1	X52429	Fragaria x ananassa	
U77226	AA882753.1	Oryza longistaminata	AAK33924.1	AY009094	Robinia pseudocacia	
AE029327	BA886836.1	Nicotiana tabacum	AAK84193.1	AF029242	Pisum sativum	
U77886	AA852594.1	Ipomoea nil	AAK62104.1	AF091513	Elaeagnus umbellata	
AF078082	AAAD21872.1	Phaseolus vulgaris	SEQ ID NO. 1482	CAA07563.1	Ricinus communis	
U20948	AAK23542.1	Ipomoea trifida	CAA10608.1	AJL132228	Ricinus communis	
Y12531	CAA73134.1	Brassica oleracea	CAA70778.1	Y09591	Vicia faba	
Y14286	CAA74662.1	Brassica oleracea	AAK16014.1	AF080543	Nepenthes alata	
X98520	CAA67145.1	Brassica oleracea	CAA70969.1	Y09826	Solanum tuberosum	
Y12530	CAA73133.1	Brassica oleracea	AAK16015.1	AF080544	Nepenthes alata	
U82481	AAK93834.1	Zea mays	CAA70968.1	Y09825	Solanum tuberosum	
M97667	AAK33008.1	Brassica napus	CAA92992.1	Z68759	Ricinus communis	
AJ245479	CAK89179.1	Brassica napus subsp. napus	AAK16013.1	AF080542	Nepenthes alata	
Y76647	AAK33000.1	Brassica oleracea	AAK15945.1	AF061435	Vicia faba	
Y14285	AAK74661.1	Brassica oleracea	CAA72006.1	Y11121	Ricinus communis	
AB000970	BAK23676.1	Brassica rapa	AAK15944.1	AF061434	Vicia faba	
Y18259	CAK41878.1	Brassica oleracea	AAK15946.1	AF061436	Nicotiana sylvestris	
Y18260	CAK41879.1	Brassica oleracea	AAK49944.1	U31932	Nicotiana sylvestris	
U00443	AAK62232.1	Brassica napus	AAK96630.1	U64823	Lycopersicon esculentum	
Z18921	CAK79355.1	Brassica oleracea	AAK25162.1	AF014810	Lycopersicon esculentum	
D38563	BAK07576.1	Brassica rapa	BAK93437.1	AF022783	Oryza sativa	
AB032474	BAK02837.1	Brassica oleracea	AAK25161.1	AF014809	Lycopersicon esculentum	
AB032473	BAK92836.1	Brassica oleracea	AAK25160.1	AF014808	Lycopersicon esculentum	
AB034061	BAK21001.1	Brassica rapa	AAK76897.1	AF274032	Atriplex hortensis	
D38564	BAK07577.2	Brassica rapa	CAA42599.1	AJ238635	Chloralla protothecoides	
D30049	BAK06285.1	Brassica rapa	SEQ ID NO. 1484	AAK13408.1	Brassica napus	
D88193	BAK21132.1	Brassica rapa	AAK13407.1	AF297472	Brassica napus	
AF088885	AAK52097.1	Nicotiana tabacum	AAK32993.1	M81224	Brassica napus	
AB041503	BAK94509.1	Populus nigra	AAK33011.1	L21896	Brassica rapa	
AB041504	BAK94510.1	Populus nigra	CAA80862.1	Z24737	Brassica rapa	
AF077130	CAK27489.1	Oryza sativa	CAA80862.1	Z24737	Brassica rapa	
U93048	AAK61708.1	Daucus carota	CAA39890.1	AJ237582	Amoracia rusticana	
AF238472	AAK78016.1	Oryza sativa	CAA10234.1	AJL30888	Fagus sylvatica	
AF044260	AAK02535.1	Oryza sativa				
U51330	AAK49629.1	Triticum aestivum				
L27821	AAK33915.1	Oryza sativa				

RA002489.1	AF049356	Oryza sativa	RAF59905.1	AF197946	Glycine max
CRAG0479.1	X86783	Haematococcus pluvialis	BAA06538.1	D31737	Nicotiana tabacum
SEQ ID NO. 1492			BA04509.1	AF041503	Nicotiana glauca
CRAG0538.1	AJ293028	Brassica napus	RAK11522.1	AF24688	Glycine max
CRAG6987.1	Y08210	Nicotiana glauca	RAK11566.1	AF318490	Lycopersicon hirsutum
BRAG3382.1	AF008519	Triticum aestivum	RAK11571.1	U67422	Zea mays
RAK19519.1	AF332214	Triticum aestivum	RAK11571.1	AF053127	Malus domestica
RAK49531.1	U34198	Triticum aestivum	RAK11571.1	U59316	Lycopersicon esculentum
RAK49531.1	AF288688	Triticum aestivum	RAK11569.1	AF220603	Lycopersicon esculentum
RAK49532.1	U34290	Triticum aestivum	RAK11569.1	AF318493	Lycopersicon hirsutum
RAK02066.1	AF026523	Chlamydomonas reinhardtii	RAK11574.1	AF041504	Populus nigra
RAK09025.1	U25438	Chlamydomonas reinhardtii	RAK11574.1	AF339747	Lophopyrum elongatum
RAK09025.1	U25438	Chlamydomonas reinhardtii	RAK11574.1	AF131222	Lophopyrum elongatum
RAK09026.1	U25439	Chlamydomonas reinhardtii	RAK11574.1	AF172282	Oryza sativa
RAK11238.1	AJ223296	Chlamydomonas reinhardtii	RAK11567.1	AF318491	Lycopersicon hirsutum
SEQ ID NO. 1493			RAK11567.1	U59315	Lycopersicon pimpinellifolium
CRAG6403.1	U92810	Glycine max	RAK11567.1	U02271	Lycopersicon pimpinellifolium
CRAG63338.1	X92646	Helianthus annuus	RAK11567.1	AF220602	Lycopersicon pimpinellifolium
RAK76309.1	AF019617	Triticum aestivum	RAK11567.1	AF007545	Brassica napus
RAK70536.1	AF017856	Oryza sativa	RAK11567.1		
CRAG7973.1	Z18809	Oncoclea sensibilis	RAK11567.1		
SEQ ID NO. 1494			SEQ ID NO. 1497		
CRAG67291.1	X38739	Pisum sativum	RAK11567.1	AF078082	Phaseolus vulgaris
CRAG67290.1	X38738	Pisum sativum	RAK11567.1	U20948	Ipomoea trifida
SEQ ID NO. 1496			RAK11567.1	U25531	Brassica oleracea
RAK00510.1	AF285172	Phaseolus vulgaris	RAK11567.1	U24861	Zea mays
RAK4787.1	AF000559	Oryza sativa	RAK11567.1	Y14286	Brassica oleracea
RAK33373.1	AF000391	Oryza sativa	RAK11567.1	Y12530	Brassica oleracea
RAK37692.1	U73295	Catharanthus roseus	RAK11567.1	X98520	Brassica oleracea
RAK1965.1	AF028699	Brassica napus	RAK11567.1	Y14285	Brassica oleracea
CRAG51834.1	U00669	Oryza sativa	RAK11567.1	Y18259	Brassica oleracea
RAK61708.1	U93048	Daucus carota	RAK11567.1	Y76647	Brassica oleracea
CRAG61510.1	X89226	Oryza sativa	RAK11567.1	AJ245479	Brassica napus subsp. napus
RAK78764.1	AF023482	Oryza sativa	RAK11567.1	M97667	Brassica napus
RAK59906.1	AF197947	Glycine max	RAK11567.1	AF032473	Brassica rapa
RAK91324.1	AF244890	Glycine max	RAK11567.1	U00463	Brassica rapa
RAK91323.1	AF244889	Glycine max	RAK11567.1	AF032474	Brassica rapa
			RAK11567.1	AF054061	Brassica rapa
			RAK11567.1	D38564	Brassica rapa

[illegible]

AAA003726.1	U04785	Glycine max	AAA33915.1	L27821	Oryza sativa
CAA67169.1	X35516	Solanum tuberosum	RAA212872.1	AF078082	Phaseolus vulgaris
			AGA03090.1	AC073405	Oryza sativa
			RAA94510.1	AB041504	Populus nigra
			RAA94628.1	AY007545	Brassica napus
			RAA94509.1	AB041503	Populus nigra
			RAA37692.1	Z73295	Catharanthus roseus
			CBA51834.1	00069	Oryza sativa
			RAA4787.1	AF000559	Oryza sativa
			RAA83373.1	AF000391	Oryza sativa
			RAA92954.1	AF001551	Oryza sativa
			AAAF4396.1	AF131222	Lophopyrum elongatum
			AAK11674.1	AF339747	Lophopyrum elongatum
			RAA94529.2	AF001800	Oryza sativa
			RAA94517.1	AF001800	Oryza sativa
			RAA78764.1	AB023482	Oryza sativa
			RAA94516.1	AB001800	Oryza sativa
			RAA939384.1	U92481	Zea mays
			RAA7422.1	AS9318	Lycopersicon esculentum
			RAA76314.1	AZ220603	Lycopersicon esculentum
			RAA74724.1	U93917	Lycopersicon pimpinellifolium
			RAA76307.1	AZ220602	Lycopersicon pimpinellifolium
			CAA67145.1	X98520	Brassica oleracea
			SEQ ID NO. 1511		Malus sp.
			CAA50498.1	X71360	Catharanthus roseus
			CAA49826.1	U71604	Catharanthus roseus
			CAA49827.1	U71605	Catharanthus roseus
			AA597311.1	AF008597	Catharanthus roseus
			RAA26206.1	AF117270	Malus x domestica
			CAA53579.1	X75965	Vitis vinifera
			RAA78340.1	AB0417153	Atropa belladonna
			CAA55628.1	X78994	Medicago sativa
			CAA97325.1	U23066	Persea americana
			RAA19657.1	AB002816	Perilla frutescens
			CAA66820.1	U93210	Ficus sativum
			CAA57410.1	X81812	Medicago sativa
			AA91227.1	U04434	Zea mays
			AAI15414.1	AF0736093	Nicotiana tabacum
			RAA97310.1	U96837	Chrysanthemum x morifolium
			RAA05630.1	D26583	Hyocymus niger
			SEQ ID NO. 1506		
			RAA48912.1	AF139532	Liquidambar styraciflua
			CAA26920.1	AZ295586	Arabisopsis lyrata subsp. petraea
			RAA37433.1	AF150881	Lycopersicon esculentum x Lycopersicon peruvianum
			CAA65335.1	A0C10324	Populus balsamifera subsp. trichocarpa
			RAA48912.1	AF139532	Matthiola incana
			RAA48912.1	AF139532	Petunia x hybrida
			CAA4949299.1	AF313489	Callistephus x hortorum
			AAAG49315.1	AF315465	Pellargonium chinensis
			CAA80266.1	Z22545	Petunia x hybrida
			RAA03438.1	D14588	Petunia x hybrida
			CAA32274.1	AF081575	Petunia x hybrida
			CAA0950.1	AJ011862	Catharanthus roseus
			CAA80265.1	Z22544	Petunia x hybrida
			RAA494300.1	AF313490	Lycianthes rantonnetii
			RAA03440.1	D14590	Campanula medium
			CAA50645.1	X71854	Solanum melongena
			CAA50155.1	X70824	Solanum melongena
			CAA50312.1	X70981	Solanum melongena
			SEQ ID NO. 1508		Nicotiana tabacum
			RAA837246.1	U58971	
			SEQ ID NO. 1510		
			AAAB61708.1	U93048	Daucus carota
			AAAC1965.1	AV028699	Brassica napus

AAA33387.1	M62719	<i>Hyoscyamus niger</i>	BA823307.1	AB027753	<i>Nicotiana tabacum</i>
AA056577.1	AF184270	<i>Daucus carota</i>	BA867737.1	177080	<i>Stylosanthes humilis</i>
SEQ ID NO. 1515			AA037429.2	AF149279	<i>Phaseolus vulgaris</i>
AA032139.1	AF051237	<i>Picea mariana</i>	CA071494.1	Y10468	<i>Spinacia oleracea</i>
			AA067302.1	AF145349	<i>Glycine max</i>
			AA666037.1	AR244921	<i>Spinacia oleracea</i>
				X97351	<i>Populus balsamifera</i> subsp.
SEQ ID NO. 1517			trichocarpa		
AA061647.1	AF190634	<i>Nicotiana tabacum</i>	AA065637.1	L13654	<i>Lycopersicon esculentum</i>
BA089009.1	AB027455	<i>Petunia x hybrida</i>	CA040796.1	X57564	<i>Amoracia rusticana</i>
BA036421.1	AB013596	<i>Perilla frutescens</i>	AA011482.1	U51192	<i>Glycine max</i>
BA036423.1	AB013598	<i>Verbena x hybrida</i>	CA080502.1	222920	<i>Scutellaria polyrrhiza</i>
BA093039.1	AB033758	<i>Citrus unshiu</i>	BA077387.1	AB024437	<i>Scutellaria baicalensis</i>
BA036422.1	AB013597	<i>Perilla frutescens</i>	CA059485.1	X85228	<i>Triticum aestivum</i>
AA098390.1	AF287143	<i>Brassica napus</i>	BA007663.1	D42064	<i>Nicotiana tabacum</i>
AA021086.1	AF127218	<i>Forsythia x intermedia</i>	BA011853.1	D83225	<i>Nicotiana tabacum</i>
BA012737.1	D85186	<i>Gentiana triflora</i>	BA007664.1	D42065	<i>Phaseolus vulgaris</i>
BA038248		<i>Ipomoea batatas</i>	AA037430.1	AF149280	<i>Glycine max</i>
AA017077.1	AF199453	<i>Sorghum bicolor</i>	AA011481.1	U51191	<i>Ipomoea batatas</i>
AA004166.1	AF101972	<i>Phaseolus lunatus</i>	CA094692.1	RJ242742	<i>Oryza sativa</i>
BA039009.1	AB027454	<i>Petunia x hybrida</i>	BA003644.1	D14997	<i>Oryza sativa</i>
BA086473.1	AF028237	<i>Ipomoea purpurea</i>	BA043561.1	AF155124	<i>Gossypium hirsutum</i>
BA019653.1	AB002818	<i>Perilla frutescens</i>	BA063334.1	U50652	<i>Populus kitakamiensis</i>
CA054612.1	X77462	<i>Manihot esculenta</i>	BA092500.1	AF001383	<i>Oryza sativa</i>
BA083484.1	AB031274	<i>Scutellaria baicalensis</i>	BA090365.1	AF001081	<i>Oryza sativa</i>
BA041018.1	AB047091	<i>Vitis labrusca x Vitis vinifera</i>	BA089584.1	AF001073	<i>Oryza sativa</i>
CA059450.1	X85138	<i>Lycopersicon esculentum</i>	CA049820.1	AF014469	<i>Populus balsamifera</i> subsp.
BA041020.1	AB047093	<i>Vitis vinifera</i>	CA066034.1	X97348	
BA041022.1	AB047095	<i>Vitis vinifera</i>	trichocarpa		
AA081682.1	AF000371	<i>Vitis vinifera</i>	BA011414.1	D90116	<i>Amoracia rusticana</i>
BA041017.1	AB047090	<i>Vitis labrusca x Vitis vinifera</i>	BA097734.1	AF014502	<i>Glycine max</i>
BA041026.1	AB047099	<i>Vitis vinifera</i>	CA037713.1	X53675	<i>Triticum aestivum</i>
BA041024.1	AB047097	<i>Vitis vinifera</i>	CA005277.1	AF049881	<i>Linum usitatissimum</i>
BA041025.1	AB047098	<i>Vitis vinifera</i>	CA066035.1	X97349	<i>Populus balsamifera</i> subsp.
BA041023.1	AB047096	<i>Vitis vinifera</i>	trichocarpa		
BA041021.1	AB047094	<i>Vitis vinifera</i>	BA063335.1	D30653	<i>Populus kitakamiensis</i>
BA041019.1	AB047092	<i>Vitis vinifera</i>	CA039486.1	X56011	<i>Triticum aestivum</i>
AA081683.1	AF000372	<i>Vitis vinifera</i>	BA003911.1	D16442	<i>Oryza sativa</i>
SEQ ID NO. 1518			BA094962.1	AB042103	<i>Asparagus officinalis</i>
CA054413.1	X54943	<i>Lycopersicon esculentum</i>	BA049821.1	AF014470	<i>Oryza sativa</i>
AA032676.1	X57637	<i>Arachis hypogaea</i>	AA037427.1	AF149277	<i>Phaseolus vulgaris</i>

AAC23542.1	U20948	Ipomoea trifida	CMA81386.1	426633	Flaveria pringlei
CMA73134.1	Y12531	Brassica oleracea	AMA84890.1	U13630	Brassica oleracea
BA51834.1	00069	Oryza sativa	CMA82979.1	X17508	Nicotiana tabacum
BMA94509.1	AB041503	Populus nigra	AAK01174.1	X13754	Spinacia oleracea
AGA1662.1	AY007457	Brassica napus	AAK20117.2	AF314182	Triticum aestivum
BAA92954.1	AF001551	Oryza sativa	AMA84649.1	U66403	Zea mays
BMA94510.1	AB041504	Populus nigra	CMA81349.1	226595	Zea mays
AAG03090.1	AC073405	Oryza sativa	ABA40650.1	U66404	Zea mays
AAFG1322.1	AF244888	Glycine max	CMA47430.1	X67045	Solanum tuberosum
BMA94517.1	AF001800	Oryza sativa	CMA81385.1	226632	Flaveria trinervia
AA41836.1	AJ243961	Oryza sativa	AAK27373.1	AY028422	Oryza sativa
BAW8764.1	AB023482	Oryza sativa	ABA40648.1	U66402	Nicotiana tabacum
AA33915.1	I27821	Oryza sativa	MA86907.1	AF223359	Plastid Mesembryanthemum
AAFG1323.1	AF244889	Glycine max	crystallinum		
CMA67145.1	X98520	Brassica oleracea	U13632		Brassica oleracea
CMA73133.1	Y12530	Brassica oleracea	AMA84647.1	U66401	Nicotiana tabacum
MAF91324.1	AF244890	Glycine max	BA055058.1	AF173679	Beta vulgaris
CA47466.1	Y14285	Brassica oleracea			
BA92953.1	AF001551	Oryza sativa	SEO ID NO. 1539		
MAF43496.1	AF131222	Lophopyrum elongatum	MA829748.1	AF172172	Medicago sativa
AAK11674.1	AF339747	Lophopyrum elongatum	CMA68403.1	I00296	Trema tomentosa
BA94516.1	AF001800	Oryza sativa	AAK28426.1	AF027215	Trema orientalis
MA41878.1	Y18259	Brassica oleracea	MA86653.1	U27194	Parasponia andersonii
MAA23676.1	AB000970	Brassica rapa	CMA63706.1	AJ131349	Trema virgata
CMA41879.1	Y18260	Brassica oleracea	CMA63709.1	AJ131352	Trema virgata
			CMA37898.1	X53950	Casuarina glauca
SEO ID NO. 1537			CMA16751.1	299635	Trema orientalis
AAD25300.1	AF088276	Lycopersicon esculentum	CMA63707.1	AJ131350	Trema virgata
CMA63704.1	X93301	Oryza sativa	CMA63708.1	AJ131351	Trema virgata
AAD24966.1	AF109150	Lycopersicon esculentum	MAA97887.1	U47143	Glycine max
AAD25225.1	AF088279	Potamogeton crispus	MAA70097.1	U94968	Hordeum vulgare
			CMA01183.1	AF291052	Zea mays subsp. parviglumis
SEO ID NO. 1538			MAA44664.1	AF236080	Zea mays
CMA06525.1	AF020814	Pisum sativum	MAA49884.1	U76031	Oryza sativa
MAA08526.1	AF020816	Solanum tuberosum	MAA49881.1	U76028	Oryza sativa
MAA08524.1	AF020813	Zea mays	MAA7676.1	AY026343	Lycopersicon esculentum
MAA86908.1	AF223360	Plastid Mesembryanthemum	MAA01175.1	AY005818	Zea mays subsp. mays
crystallinum			MAA49882.1	U76029	Oryza sativa
CMA48210.1	X68077	Pisum sativum	MAA49883.1	U76030	Oryza sativa
MAA86906.1	AF223358	Plastid Mesembryanthemum	MAA22833.1	AF309562	Ceratodon purpureus
crystallinum			MAA66104.1	AF218049	Phaeocystis patens

RAK14807.1	AY026342	Physcomitrella patens	U29333	Pisum sativum
CA07547.1	AZ070507	Cichorium intybus x Cichorium endivia	AP218296	Pisum sativum
AAA03005.1	128826	Casuarina glauca	X96784	Nicotiana tabacum
AAA03005.1	M23313	Sesbania rostrata	BAA12159.1	Glycine max
BAA31155.1	AB015719	Pisum sativum	AB056289.1	Petunia x hybrida
BAA31157.1	AB015721	Pisum sativum	CA064635.1	Nicotiana tabacum
RA048005.1	991077	Medicago sativa	AD038930.1	Glycine max
CA049000.1	X57733	Medicago truncatula	AB024461	Glycine max
BAA31156.1	AB015720	Pisum sativum	AB024980	Cicer arietinum
CA032492.1	X14311	Medicago sativa	D66351	Glycine max
RA032657.1	X36100	Medicago sativa	CA039454.1	Eschscholzia californica
RA024088.1	AB009844	Pisum sativum	AB022733	Glycyrrhiza echinata
CA031750.1	X13375	Medicago sativa	AB001380	Glycyrrhiza echinata
CA030970.1	554159	Vicia faba	CA070575.1	Nepeta racemosa
RA018503.1	U09671	Canavalia lineata	CA050648.1	Solanum melongena
CA090669.1	554156	Vicia faba	AB094587.1	Glycine max
CA090668.1	554157	Vicia faba	BAA84072.1	Torenia hybrida
CA031859.1	X13505	Sesbania rostrata	CA032274.1	Petunia x hybrida
CA032044.1	X13815	Sesbania rostrata	AB028152	Petunia x hybrida
CA038024.1	X54089	Medicago sativa	AB006790	
RAA03002.1	M23312	Sesbania rostrata		
			SEQ ID NO. 1542	
SEQ ID NO. 1540			AB063814.1	Glycine max
AB065776.1	U97521	Vitis vinifera	AB034767.1	Euphorbia esula
AB065777.1	U97522	Vitis vinifera	AF227622	Oryza sativa
BAA03751.1	D16223	Oryza sativa	BAA04568.1	Lupinus luteus
CA030142.1	X07130	Solanum tuberosum	CA063786.1	Zea mays
BAA03749.1	D16221	Oryza sativa	CA069256.1	
			SEQ ID NO. 1544	
SEQ ID NO. 1541			AB084222.1	Helianthus annuus
CB043505.1	AJ239051	Cicer arietinum	CA039708.1	Nicotiana tabacum
BAA93634.1	AB025016	Lotus japonicus		
CB041490.1	AJ238439	Cicer arietinum	SEQ ID NO. 1547	Mesembryanthemum crystallinum
RA010067.1	A0012581	Cicer arietinum	AF075579	Mesembryanthemum crystallinum
BAA22422.1	AB001379	Glycyrrhiza echinata	CA030358.1	Nicotiana tabacum
BAA74465.1	AB022732	Glycyrrhiza echinata	CB090633.1	Fagus sylvatica
CA040411.1	AJ000478	Helianthus tuberosus	CA030359.1	Nicotiana tabacum
CA040411.1	AJ000477	Helianthus tuberosus	AD017804.1	Lotus japonicus
CA032913.1	M32885	Persea americana	CA092575.1	Fagus sylvatica
RA090208.1	AF175278	Pisum sativum	CA072341.1	Medicago sativa
			AD017805.1	Lotus japonicus
			CA036698.1	Mesembryanthemum crystallinum

RA036699.1	AF075581	Mesembryanthemum crystallinum	Populus balsamifera subsp.
RA043835.1	AF213455	Zea mays	Populus kitakamiensis
RA036700.1	AF075582	Mesembryanthemum crystallinum	Medicago sativa
RA041430.1	AF075583	Mesembryanthemum crystallinum	Populus kitakamiensis
RA035951.1	AF075584	Mesembryanthemum crystallinum	Vigna angularis
RA090634.1	A0277744	Fagus sylvatica	Oryza sativa
RA093832.1	U81960	Zea mays	Spinacia oleracea
RA026828.1	AF075603	Oryza sativa	Zea mays
CA009576.1	A0298988	Fagus sylvatica	Triticum aestivum
SEQ ID NO. 1548			Phaseolus vulgaris
CA009881.1	AJ011939	Trifolium repens	Spinacia oleracea
CA062228.1	X90695	Medicago sativa	Glycine max
RA071495.1	Y10469	Spinacia oleracea	Nicotiana tabacum
RA041812.1	L36158	Medicago sativa	Oryza sativa
RA077387.1	AF024437	Scutellaria baicalensis	Arachis hypogaea
RA063024.1	AF244921	Spinacia oleracea	Spinacia oleracea
RA011483.1	U51193	Glycine max	Nicotiana glauca
RA067737.1	L77080	Stylosanthes humilis	Amoracia rusticana
RA07663.1	D42064	Nicotiana tabacum	Spinacia oleracea
RA07664.1	D42065	Nicotiana tabacum	Glycine max
CA094692.1	A0242742	Ipomoea batatas	Nicotiana glauca
CA067121.1	Y19023	Lycopersicon esculentum	Nicotiana tabacum
CA062226.1	X90693	Medicago sativa	Lycopersicon esculentum
CA050597.1	Y15193	Lycopersicon esculentum	Lycopersicon esculentum
RA011481.1	U51191	Glycine max	Nicotiana tabacum
RA011484.1	U51194	Glycine max	Oryza sativa
RA02306.1	AB027752	Nicotiana tabacum	Arachis hypogaea
RA05537.1	L13654	Lycopersicon esculentum	Spirodelia polyrrhiza
RA011482.1	U51192	Glycine max	Stylosanthes humilis
CA062225.1	X90692	Medicago sativa	Nicotiana tabacum
CA098519.1	AF07211	Glycine max	Lycopersicon esculentum
RA037427.1	AF149277	Phaseolus vulgaris	Glycine max
RA014144.1	D90116	Amoracia rusticana	Spinacia oleracea
CA098491.1	L36981	Petroselinum crispum	Glycine max
CA071488.1	Y10462	Spinacia oleracea	Spinacia oleracea
RA043561.1	AF155124	Gossypium hirsutum	Phaseolus vulgaris
RA014143.1	D90115	Amoracia rusticana	Oryza sativa
CA071490.1	Y10464	Spinacia oleracea	Glycine max
AN002554.1	L37790	Stylosanthes humilis	Lycopersicon esculentum
SEQ ID NO. 1549			
CA067374.2	Y16776	Spinacia oleracea	
RA011482.1	U51192	Glycine max	
RA011481.1	U51191	Nicotiana glauca	
RA067663.1	D42064	Nicotiana tabacum	
RA065637.1	L13654	Lycopersicon esculentum	
RA065636.1	L13653	Lycopersicon esculentum	
RA07664.1	D42065	Nicotiana tabacum	
RA067664.1	D14997	Oryza sativa	
RA032676.1	M37637	Arachis hypogaea	
RA080502.1	Z22920	Spirodelia polyrrhiza	
RA067737.1	L77080	Stylosanthes humilis	
RA062307.1	AB027753	Nicotiana tabacum	
CA064413.1	X94943	Lycopersicon esculentum	
RA011484.1	U51194	Glycine max	
RA063024.1	AF244921	Spinacia oleracea	
RA011483.1	U51193	Glycine max	
CA071494.1	Y10468	Spinacia oleracea	
RA037428.2	AF149279	Phaseolus vulgaris	
RA092500.1	AF001383	Oryza sativa	
CA098519.1	AF007211	Glycine max	
CA067121.1	Y19023	Lycopersicon esculentum	

CMA62226.1	X90693	Medicago sativa	BAA39391.1	AE048949	Hordeum vulgare
CMA50597.1	X71593	Lycopersicon esculentum	CMA76138.1	Y16242	Triticum aestivum
AA037375.1	AF145349	Glycine max	AA033899.1	LI0346	Oryza sativa
AA097734.1	AF014502	Glycine max	AA0301645	AF301645	Hordeum vulgare
BA094962.1	AB042103	Asparagus officinalis	AA044882.1	AF284857	Calystegia sepium
BA065334.1	AD250121	Picea abies	AA067128.1	X98504	Triticum aestivum
BA065335.1	D30653	Populus kinkameensis	AA015902.1	AF068119	Zea mays
BA077387.1	AB024437	Scutellaria baicalensis	AA078181.1	Z11772	Secale cereale
AA071490.1	Y10464	Spinacia oleracea	CMA81091.1	225871	Zea mays
AA043561.1	AF155124	Gossypium hirsutum	BAA02286.1	D12882	Ipomoea batatas
AA063027.1	AF244924	Spinacia oleracea	BA092921.1	PD001539	Oryza sativa
BA014144.1	D90116	Amaranthus rusticus	AA008028.1	PD1022	Ipomoea batatas
BA076680.1	Y17192	Cucurbita pepo	AA08148.1	AF139501	Prunus americana
BA089584.1	AF001073	Oryza sativa	AA064177.1	AF012345	Hordeum vulgare
BA090365.1	AF001081	Oryza sativa	BA009793.1	D63574	Hordeum vulgare
CBA94892.1	AF242742	Ipomoea batatas	CBA0105.1	X56765	Secale cereale
BA011011.1	L36157	Medicago sativa	SEQ ID NO. 1551		
AA021293.1	AF0401276	Zea mays	CMA11219.1	AF223281	Manihot esculenta
AA057427.1	AF149277	Phaseolus vulgaris	AA049184.1	U04002	Hevea brasiliensis
CMA71486.1	Y10462	Spinacia oleracea	CMA02334.1	Z29091	Manihot esculenta
CMA62227.1	X90694	Medicago sativa	CMA11426.1	AF223506	Manihot esculenta
CBA62615.1	X91232	Mercurialis annua	SEQ ID NO. 1552		
CBA66037.1	X97351	Populus balsamifera subsp. trichocarpa	AC034858.1	AF092033	Hemerocallis hybrid cultivar
SEQ ID NO. 1550			AA004188.1	AF026217	Limnanthes douglasii
AA004188.1	AF026217	Medicago sativa	AA028600.1	AF247134	Simmondsia chinensis
BA009462.1	D50866	Glycine max	AA049186.1	U37088	Brassica napus
BA020453.1	AF004271	Glycine max	AA072178.1	AF009563	Brassica napus
BA020459.1	AF049098	Trifolium repens	AA096054.1	U50771	Brassica napus
CA012395.1	AF225087	Vigna unguiculata	AA011266.1	AF333040	Dunaliella salina
BA040815.1	D21349	Hordeum vulgare	CA071898.1	Y11007	Brassica juncea
BA008741.1	D49999	Hordeum vulgare	CA017746.1	AJ291728	Zea mays
BA067246.1	AF061204	Hordeum vulgare subsp. spontaneum	CA025109.1	AF054497	Brassica napus
AA033898.1	LI0345	Oryza sativa	CA025110.1	AF054498	Brassica napus
AA036556.1	X52321	Hordeum vulgare	CA025111.1	AF054499	Brassica rapa
AA025637.1	AF300799	Hordeum vulgare	CA025112.1	AF054500	Brassica oleracea
AA067245.1	AF061203	Hordeum vulgare	SEQ ID NO. 1553		
AA030294.1	AF353207	Castanea crenata	AA07328.1	D38132	Cucurbita sp.
AA025638.1	AF300800	Hordeum vulgare	AA02743.1	U19481	Citrus maxima
			AA023557.1	AB017159	Daucus carota

385

CAA59010.1	X84228	Beta vulgaris	CMA67600.1	X99210	Lycopersicon esculentum
CAA59008.1	X84226	Nicotiana tabacum	CMA64614.1	X95296	Lycopersicon esculentum
CMA52976.1	X75082	Solanum tuberosum	RAA22256.1	AF161711	Pimpinella brachycarpa
RAA82390.1	AP000367	Oryza sativa	RAA88222.1	AB028650	Nicotiana tabacum
CAA59009.1	X84227	Populus x generosa	CMA67575.1	X99134	Lycopersicon esculentum
			CMA76387.1	Z13997	Petunia x hybrida
			CMA66952.1	X96308	Lycopersicon esculentum
SEQ ID NO. 1555			AAA31100.1	U72762	Nicotiana tabacum
RAA67052.1	AF190303	Adiantum radianum	AAA33500.1	M73028	Zea mays
RAA08959.1	AF122051	Solanum tuberosum	RAA836774.1	AF210616	Zea mays
RAA67053.1	AF190304	Adiantum radianum	RAA88223.1	AB028651	Nicotiana tabacum
RAA67050.1	AF190301	Secale cereale	RAA88224.1	AB028652	Nicotiana tabacum
RAA67051.1	AF190302	Secale cereale	RAA88221.1	AB028652	Nicotiana tabacum
RAA60961.1	AF122053	Solanum tuberosum			
RAA08960.1	AF122052	Solanum tuberosum			
RAA81731.1	AB029160	Glycine max	SEQ ID NO. 1557		
RAA81730.1	AB029159	Glycine max	RAA03763.1	D16247	Nicotiana sylvestris
CMA72217.1	Y11414	Oryza sativa	RAA03061.1	AF156667	Vigna radiata
RAA81732.1	AB029161	Glycine max	RAA75791.1	AF271892	Pisum sativum
CMA64615.1	X95297	Lycopersicon esculentum	CMA68193.1	X99937	Spinacia oleracea
RAA08962.1	AF122054	Solanum tuberosum	RAA020980.1	AF079782	Zea mays
RAA88223.1	AB028651	Nicotiana tabacum	RAA95703.1	AB042644	Oryza sativa
RAA78387.1	Z13997	Petunia x hybrida	RAA95704.1	AB042643	Oryza sativa
RAA81103.1	U72762	Nicotiana tabacum	RAA68833.1	AC084218	Oryza sativa
RAA4790.1	AB058642	Lilium hybrid division I			
RAA813574.1	AC037425	Oryza sativa	SEQ ID NO. 1559		
RAA88221.1	AB028649	Nicotiana tabacum	RAA83689.1	AB011966	Oryza sativa
RAA72185.1	Y11350	Oryza sativa	RAA83688.1	AB011967	Oryza sativa
RAA88224.1	AB028652	Nicotiana tabacum	RAA22219.1	AF141378	Zea mays
RAA88222.1	AB028650	Nicotiana tabacum	RAA34675.1	AB011670	Triticum aestivum
RAA81733.2	AB029162	Glycine max	CMA73069.1	Y12465	Sorghum bicolor
RAA71992.1	Y11105	Pisum sativum	CMA73067.1	Y12464	Sorghum bicolor
AAK19618.1	AF336285	Gossypium hirsutum	CMA67693.1	AF004947	Oryza sativa
AAK19611.1	AF336278	Gossypium hirsutum	RAA96628.1	AF002482	Oryza sativa
RAA34434.1	AF172282	Oryza sativa	RAA023582.1	AF128443	Glycine max
CMA67575.1	X99134	Lycopersicon esculentum	RAA05649.1	D26602	Nicotiana tabacum
RAA08983.1	AY026332	Oryza sativa	CMA71142.1	Y10036	Cucumis sativus
AAK19615.1	AF336282	Gossypium hirsutum			
SEQ ID NO. 1556			AF062479		Oryza sativa
CMA78386.1	Z13996	Petunia x hybrida	CAAG5244.1	X95997	Solanum tuberosum
CMA83399.1	AO06292	Antirrhinum majus	CMA57898.1	X82548	Hordeum vulgare
			CMA07813.1	AB007990	Hordeum vulgare
			CMA6556.1	X5506	Hordeum vulgare

AA030547.1	U55768	Oryza sativa	CAB34045.1	X76535	Solanum tuberosum
CAA46504.1	X65604	Hordeum vulgare	AAH82402.2	AF029256	Kosteletzkyia virginica
AA000239.1	U73938	Nicotiana tabacum	CAH47275.1	X66737	Nicotiana plumbaginifolia
AA002040.1	U73939	Nicotiana tabacum	CAH37150.1	AB022442	Vicia faba
BAAL3608.1	D88399	Oryza sativa	BAH08134.1	D45189	Zostera marina
AAAG60195.1	AC084763	Oryza sativa	CAB69824.1	AJ271439	Prunus persica
BAAL19573.1	AA002109	Oryza sativa	CAB69823.1	AJ271438	Nicotiana glauca
AAAG69562.1	L38855	Glycine max	AAH35314.2	S79323	Vicia faba
AAH58348.1	U29095	Triticum aestivum	CAB85495.1	AJ132892	Medicago truncatula
AAH7340.1	AF186020	Vicia faba	CAB85494.1	AJ132891	Medicago truncatula
AAH6325.1	N94726	Triticum aestivum	AAH34173.1	M60166	Lycopersicon esculentum
CAH81443.1	U22686	Mesembryanthemum crystallinum	CAH29436.1	AJ310524	Nicotiana glauca
CAH06503.1	AJ005373	Craterostigma plantagineum	AAH34098.1	M80490	Zea mays
AAH21062.1	AF216527	Dunaliella tertiolecta	AAH60276.1	U09989	Nicotiana plumbaginifolia
CAH89202.1	Z49233	Chlamydomonas eugametos	AAH34094.1	M80489	Nicotiana plumbaginifolia
			CAH34052.1	M27888	Nicotiana plumbaginifolia
			CAB59799.1	X85804	Phaseolus vulgaris
		Oryza sativa	AAH98344.1	AF275745	Lycopersicon esculentum
		Oryza sativa	AAH55399.1	AF179442	Lycopersicon esculentum
		Oryza sativa	BAH06629.1	D31843	Oryza sativa
		Nicotiana tabacum	CAB54046.1	X76536	Solanum tuberosum
		Oryza sativa	CAC29435.1	AJ310523	Vicia faba
			AAH46187.1	AF156683	Nicotiana plumbaginifolia
			CAH52107.1	X73901	Dunaliella bioculata
		Brassica oleracea	AAH49042.1	U54690	Dunaliella bioculata
		Glycine max	AAH31799.1	AJ029190	Lilium longiflorum
		Glycine max	AAH29712.1	AF140499	Oryza sativa
		Mesembryanthemum crystallinum	AAH81348.1	U38965	Vicia faba
		Dunaliella bioculata	AAH32118.1	AF308816	Hordeum vulgare
		Oryza sativa	AAH7591.1	AF263917	Lycopersicon esculentum
		Lycopersicon esculentum	CAH34099.1	M80491	Nicotiana plumbaginifolia
		Lycopersicon esculentum	CAH32119.1	AF308817	Hordeum vulgare
			SEQ ID NO. 1571		
			CAH34236.1	M594863	Vigna radiata
		Oryza sativa	CAH81749.1	Z27235	Solanum tuberosum
		Nicotiana plumbaginifolia	AAH22108.1	AF119410	Lupinus albus
		Zea mays	AAH22112.1	AF119414	Lupinus albus
		Zea mays	BAH76388.1	AB007639	Pyrus pyrifolia
		Lycopersicon esculentum	CAH01401.1	Z77854	Phalaenopsis sp.
		Oryza sativa	CAH86187.1	AJ277161	Carica papaya
		Nicotiana plumbaginifolia			
		Mesembryanthemum crystallinum			

AAB05849.1	L07883	Doritaenopsis sp.	CRA40057.1	X56733	Trifolium repens
AAB05848.1	L07882	Doritaenopsis sp.	CRA40058.1	X56734	Trifolium repens
BA313137.1	A5007449	Actinidia deliciosa	CRA55196.1	X78433	Avena sativa
CRA81747.1	Z27233	Solanum tuberosum	CRA79889.2	Z21977	Brassica napus
AAD28181.1	AF109927	Musa acuminata	RAE71381.1	U95298	Manihot esculenta
CRA81748.1	Z27234	Solanum tuberosum	CRA57513.1	X72577	Brassica napus
ARC31371.1	AF080258	Musa acuminata	RAE58784.1	X21554	Brassica nigra
BA36743.1	AF044662	Prunus persica	RAA44906.1	U28047	Oryza sativa
RAA22099.2	AF129508	Musa acuminata	CAC08209.1	AJ005950	Cicer arietinum
BA34600.1	AB033503	Populus euramericana	SEQ ID NO. 1573		
RAA33057.1	AB010102	Malus x domestica	RAA16138.1	AF096298	Nicotiana tabacum
BA33859.1	AB018355	Vigna radiata	RAA77383.1	AB020590	Nicotiana tabacum
RAA30472.1	U03294	Malus sylvestris	RAA86031.1	AB026890	Nicotiana tabacum
BA319161.1	AB000679	Vigna radiata	RAA82107.1	AB022693	Nicotiana tabacum
AAAT78789.1	L34171	Lycopersicon esculentum	RAA16139.1	AF096299	Nicotiana tabacum
AAC05145.1	AF049711	Petunia x hybrida	AAU55974.1	AF121353	Petroselinum crispum
BAA00839.1	D01033	Cucurbita maxima	AAU23898.1	AF193802	Oryza sativa
CRA60594.1	X87112	Pyrus communis	BA316432.1	AB041520	Nicotiana tabacum
SEQ ID NO. 1572			BAE67058.1	AB028022	Nicotiana tabacum
AAK07429.1	AF321287	Musa acuminata	RAE35658.1	AF204925	Petroselinum crispum
AAC69619.1	AF072736	Pinus contorta	RAE27591.1	AF121354	Petroselinum crispum
RAA04007.1	AF163097	Dalbergia cochinchinensis	RAE51863.1	AF193770	Nicotiana tabacum
BA378708.1	AB003089	Polygonum tinctorium	RAE35659.1	AF204926	Petroselinum crispum
AA311166.1	U39228	Prunus avium	RAE61864.1	AF193771	Nicotiana tabacum
BA311931.1	D83177	Costus speciosus	SEQ ID NO. 1574		
RAE34650.1	AF221526	Prunus serotina	RAA01600.1	AF016713	Lycopersicon esculentum
RAE25897.1	AF170087	Cucurbita pepo	RAE20002.1	AF213936	Prunus dulcis
RAA00614.1	AF293849	Secale cereale	RAE20034.1	AF023472	Hordeum vulgare
RAE22162.1	S35175	Manihot esculenta	RAE07875.1	AF140606	Oryza sativa
AA030375.1	AF149311	Rauvolfia serpentina	CAC07206.1	AJ278966	Brassica napus
AA073339.1	L41869	Hordeum vulgare	RAA16016.1	AF080545	Nepenthes alata
AAE49177.1	U33817	Sorghum bicolor	RAE69642.1	AF000392	Lotus japonicus
CRA64442.1	X94986	Manihot esculenta	RAE93316.1	Z69370	Cucumis sativus
AA020839.1	AF082991	Avena sativa	BAE19757.1	AB052785	Glycine max
AA009850.1	U44087	Zea mays	BAE19760.1	AB052788	Glycine max
RAA10503.1	U33816	Zea mays	BAE19756.1	AB052784	Glycine max
RAA03266.1	U44773	Zea mays	RAA42860.1	AF154930	Prunus dulcis
AAE65946.1	U25157	Zea mays	SEQ ID NO. 1576		
CRA52293.1	X74217	Zea mays			
AAE28800.1	AF112888	Catharanthus roseus			

AAE61647.1	AF190634	Nicotiana tabacum	AAA34002.1	M67449	Glycine max
BAA89009.1	AB027455	Petunia x hybrida	CACQ9580.1	AU298992	Fagus sylvatica
BAA93039.1	AB033758	Citrus unshiu	AAE71734.1	AY027437	Arachis hypogaea
BAA36423.1	AB013598	Verbena x hybrida	AAE34436.1	AF172282	Oryza sativa
BAA36421.1	AB013596	Perilla frutescens	AAE66615.1	AF142596	Nicotiana tabacum
BAF98390.1	AF287143	Brassica napus	CAA08995.1	AJ010091	Brassica napus
BAA36422.1	AB013597	Perilla frutescens	BAA06538.1	D31737	Nicotiana tabacum
BAA36421.1	AF127818	Forsythia x intermedia	AAE11674.1	AF1339747	Lophopyrum elongatum
AAAD21086.1	AF127818	Gentiana triflora	BAA05548.1	D26601	Nicotiana tabacum
BAA12737.1	D85186	Lycopersicon esculentum	AAE43496.1	AF131222	Lophopyrum elongatum
CAA59450.1	X85138	Sorghum bicolor	RAK21965.1	AY028699	Brassica napus
AAE17077.1	AF199453	Petunia x hybrida	BAE09771.1	D67422	Zea mays
BAA89008.1	AB027454	Vitis vinifera	BAE71619.1	AE271206	Rosa hybrid cultivar
BAB1583.1	AF000372	Vitis labrusca x Vitis vinifera	AAE59905.1	AF197946	Glycine max
BAB41017.1	AB047090	Vitis vinifera	BAE78021.1	AF238477	Oryza sativa
BAB1582.1	AF000371	Vitis vinifera	AAE91323.1	AF244889	Glycine max
BAB41021.1	AB047095	Vitis vinifera	CAE51234.1	U0069	Oryza sativa
BAB41020.1	AB047093	Vitis vinifera	AAE46836.1	AF164020	Oryza sativa
BAB41021.1	AB047094	Vitis vinifera	CAA08997.1	AJ010093	Brassica napus
BAB41019.1	AB047092	Vitis vinifera	AAE91322.1	AE244886	Glycine max
BAA83484.1	AB031274	Scutellaria baicalensis	CAE61510.1	X85226	Oryza sativa
BAB41025.1	AB047098	Vitis vinifera	AAE59906.1	AF197947	Glycine max
BAB41023.1	AB047096	Vitis vinifera	AAE91324.1	AF244890	Glycine max
BAA90787.1	AB038248	Ipomoea batatas	SEQ ID NO. 1578		
BAA19659.1	AB002818	Perilla frutescens	CAA003516		Panax ginseng
BAB41018.1	AB047091	Vitis labrusca x Vitis vinifera	CAA06770.1	AJ005928	Brassica napus
AAE36652.1	U32643	Nicotiana tabacum	CAA06773.1	AJ005931	Brassica napus
AAE28304.1	AF346432	Nicotiana tabacum	CAA06223.1	AJ004923	Lycopersicon esculentum
BAB41024.1	AB047097	Vitis vinifera			
BAB41026.1	AB047099	Vitis vinifera	SEQ ID NO. 1579		
CAA31855.1	X13500	Zea mays	CAE03566.1	S68113	Brassica napus
AAE86473.1	AF028237	Ipomoea purpurea	CAA05472.1	AF026382	Fragaria x ananassa
CAA54614.1	X77464	Manihot esculenta	AAE1900.1	X85206	Catharanthus roseus
SEQ ID NO. 1577			BAE16431.1	AB041519	Nicotiana tabacum
AAE31141.1	AF305911	Oryza sativa	BAE16428.1	AB037109	Daucus carota
AAE31142.1	AF305912	Hordeum vulgare	BAE99575.1	AB035125	Nicotiana tabacum
CAA06334.1	AF005077	Lycopersicon esculentum	BAE95941.1	U54333	Phaseolus vulgaris
AAE46406.1	AF096250	Lycopersicon esculentum	AAE49369.1	AF180519	Glycine max
AAE10057.1	AF110519	Lycopersicon esculentum	AAE78903.1	AF248055	Nicotiana tabacum
AAE10056.1	AF110518	Lycopersicon esculentum	BAA13150.1	D86629	
AAE30005.1	AY029067	Rosa hybrid cultivar			

BAA13155.1	D86721	Nicotiana tabacum	CAAA47717.1	X67304	Glycine max
CAA42959.1	X60432	Zea mays	AAAB1595.1	AF019614	Solanum tuberosum
AAAB18205.1	U73214	Triticum aestivum	CAAG4766.1	X95513	Solanum tuberosum
CAA57810.1	X82413	Asparagus officinalis	AAAB31252.1	S73865	Solanum tuberosum
CAA40361.1	X57076	Lycopersicon esculentum	AAAB53184.1	U09026	Lycopersicon esculentum
CAA43666.1	X61395	Lycopersicon esculentum	AAAB65766.1	X73839	Lycopersicon esculentum
AAAD03487.1	AF028841	Medicago sativa	CAAG65268.1	X96405	Solanum tuberosum
AAA33132.1	L20755	Cuscuta reflexa	AAAF15296.2	AF204210	Phaseolus vulgaris
			CAA55319.1	X78581	Pisum sativum
SEQ ID NO. 1583			AAA03728.1	U04526	Glycine max
CAA49599.1	X69979	Lycopersicon esculentum	CAA434906.1	X17061	Pisum sativum
SEQ ID NO. 1584			CAA55318.1	X78580	Pisum sativum
BAAB8198.1	AF000837	Oryza sativa	BAAB3042.1	D13949	Glycine max
BAAB8195.1	AF000837	Oryza sativa	AAA33387.1	X03211	Glycine max
			AAAB71759.1	U84198	Pisum sativum
SEQ ID NO. 1585			AAAB41272.1	U50081	Glycine max
AAAD28506.1	AF123265	Lycopersicon esculentum	CAA33604.1	X56139	Glycine max
AAAB49425.1	U72489	Solanum tuberosum	AAAG6817.1	U28457	Glycine max
AAAD28507.2	AF123266	Lycopersicon esculentum	AAAG42354.1	AF234963	Phaseolus vulgaris
			AAAG18376.1	AF283894	Zantedeschia aethiopica
SEQ ID NO. 1586			AAAD3093.1	AF095895	Oryza sativa
CAA65269.1	X96406	Solanum tuberosum	CAAC04380.1	AF295015	Pisum sativum
AAAB5767.1	U37840	Lycopersicon esculentum	CAA45088.1	X63525	Phaseolus vulgaris
BAAC03102.1	D14000	Oryza sativa	AAAB18970.2	U76687	Phaseolus vulgaris
AAAC12951.1	U56406	Hordeum vulgare	AAAC49159.1	U36191	Glycine max
CAAB94852.1	AF040431	Prunus dulcis	AAAC03726.1	U04785	Glycine max
AAAG21694.1	AY008278	Lycopersicon esculentum	CAA45086.1	X63521	Phaseolus vulgaris
AAAB79186.1	U36339	Cucumis sativus	SEQ ID NO. 1589		
AAAB67858.1	U60200	Solanum tuberosum	CAAB39890.1	AJ237582	Amoracia rusticana
CAAB67465.1	X95512	Solanum tuberosum	CAAB39158.1	AJ132906	Brassica napus
CAAB30308.1	AJ271161	Cucumis sativus	CAAB39159.1	AJ132905	Brassica rapa
CAAB58859.1	X84040	Nicotiana tabacum	CAAB39172.1	AJ132903	Raphanus sativus
AAAB67865.1	U60202	Solanum tuberosum	CAAB39892.1	AJ237564	Capsella bursa-pastoris
CAAS5724.1	X79107	Solanum tuberosum	SEQ ID NO. 1590		
AAAB67860.1	U60201	Solanum tuberosum	AAAL19616.1	AF356283	Gossypium hirsutum
CAAB65460.1	Y18548	Solanum tuberosum	CAAB78386.1	Z13996	Petunia x hybrida
AAAD04258.1	AF039651	Solanum tuberosum	CAAB72218.1	Y11415	Oryza sativa
AAAB1594.1	AF019613	Solanum tuberosum	CAAB43399.1	AJ006292	Antirrhinum majus
AAA33986.1	J02795	Glycine max	AAAL19619.1	AF356286	Gossypium hirsutum
AAAB67732.1	U50075	Glycine max			

CA50224.1	X70879	Hordeum vulgare	RAD1617.1	AF050495	Lycopersicon esculentum
CA50222.1	X70877	Hordeum vulgare	RAA34138.1	M96324	Lycopersicon esculentum
BA23337.1	D8617	Oryza sativa	RAO1616.1	AF050496	Lycopersicon esculentum
CA46414.1	X95296	Lycopersicon esculentum	BA90510.2	AF001111	Oryza sativa
CA50221.1	X70876	Hordeum vulgare	AAF3985.1	AF096871	Zea mays
AAK19611.1	AF336278	Gossypium hirsutum	BA858910.1	U82966	Oryza sativa
BA81732.1	AB029161	Glycine max	CAM69823.1	AJ271438	Prunus persica
BA81731.1	AB029162	Glycine max	CAC29436.1	AJ310524	Nicotiana glumabaginifolia
BA81730.1	AB029159	Glycine max	RAA46188.1	AF156691	Nicotiana glumabaginifolia
CA72185.1	Y11350	Oryza sativa	RAA46186.1	AF156679	Nicotiana glumabaginifolia
AAK13574.1	AC037425	Oryza sativa	CMA47275.1	X66737	Nicotiana glumabaginifolia
BA81733.2	AB029162	Glycine max	RAA17186.1	U72148	Lycopersicon esculentum
BA88221.1	AB028649	Nicotiana tabacum	RAA29712.1	AF140499	Oryza sativa
CA78387.1	Z13997	Petunia x hybrida	CA59800.1	X85805	Zea mays
BA88224.1	AB028652	Nicotiana tabacum	RAA35314.2	S79323	Vicia faba
BA23338.1	D8618	Oryza sativa	RAA34173.1	M60166	Lycopersicon esculentum
AAK19617.1	AF336284	Gossypium hirsutum	CA54045.1	X76535	Solanum tuberosum
CA72217.1	Y11414	Oryza sativa	BA60276.1	U09389	Zea mays
CA367600.1	X99210	Lycopersicon esculentum	RAA84022.2	AF029256	Kostelerkyia virginica
AAK19615.1	AF336282	Gossypium hirsutum	RAA34098.1	M80490	Nicotiana glumabaginifolia
BA81736.1	AB029165	Glycine max	CA549799.1	X85804	Phaseolus vulgaris
BA88222.1	AB028650	Nicotiana tabacum	RAA41896.1	U84891	Mesembryanthemum crystallinum
AA41101.1	U72762	Nicotiana tabacum	CA555399.1	AF179442	Lycopersicon esculentum
BA88223.1	AB028651	Nicotiana tabacum	AAF98344.1	AF275745	Lycopersicon esculentum
AAK19618.1	AF336285	Gossypium hirsutum	CA54046.1	X76536	Solanum tuberosum
CA72186.1	Y11351	Oryza sativa	RAA34052.1	M27888	Nicotiana glumabaginifolia
CA66952.1	X98308	Lycopersicon esculentum	CA66982.1	AJ271439	Prunus persica
AF161711	AF161711	Pimpinella brachycarpa	RAA34094.1	M80489	Nicotiana glumabaginifolia
CA64615.1	X95297	Lycopersicon esculentum	BA06629.1	D31843	Oryza sativa
CA67575.1	X99134	Lycopersicon esculentum	BA49042.1	U54690	Dunaliella acidophila
AA119821.1	L19495	Zea mays	AAK31799.1	AF029190	Lilium longiflorum
CA65525.1	X96749	Oryza sativa	CAC29435.1	AJ310523	Vicia faba
BA333500.1	M73028	Zea mays	RAA37150.1	AF022442	Vicia faba
BA23339.1	D86619	Oryza sativa	BAO1058.1	D10207	Oryza sativa
SEQ ID NO. 1594			CA85494.1	AJ132891	Medicago truncatula
RA28435.1	AF195028	Glycine max	CA85495.1	AJ132892	Medicago truncatula
RA28436.1	AF195029	Glycine max	RAA46187.1	AF156683	Nicotiana glumabaginifolia
CA68234.1	X99072	Brassica oleracea	BA08134.1	D45189	Zostera marina
AA81036.1	AF145478	Mesembryanthemum crystallinum	CA522107.1	X73901	Dunaliella bioculata
CA63790.1	X33592	Dunaliella bioculata	RAA24099.1	M80491	Nicotiana glumabaginifolia
			RAA20601.1	U08985	Zea mays

CRA065039.1	AJ005042	Cicer arietinum	RAC97494.1	AF079232	Lycopersicon esculentum
CRA54525.1	X77319	Asparagus officinalis	AA067995.1	U73746	Gossypium hirsutum
CRA67342.1	AF229795	Vigna radiata	AA024540.1	AF113545	Nicotiana tabacum
CRA10128.1	AJ012687	Cicer arietinum	AA067994.1	U73747	Gossypium hirsutum
AA061470.1	AF004812	Mangifera indica	AA079922.1	U19541	Fragaria x ananassa
AA07377.1	AF064786	Carica papaya	CRA75213.1	Y14972	Nicotiana tabacum
AA021626.1	AF023847	Lycopersicon esculentum	CRA76769.1	Y17502	Nicotiana tabacum
CRA10174.1	AJ012797	Lycopersicon esculentum	CRA7493.1	AF079231	Lycopersicon esculentum
CRA10175.1	AJ012798	Lycopersicon esculentum	CRA75214.1	Y14973	Nicotiana tabacum
AA070821.1	AF154420	Lycopersicon esculentum	CRA76770.1	Y17503	Nicotiana tabacum
AA025984.1	AF020390	Lycopersicon esculentum	CRA92956.1	AJ401032	Solanum tuberosum
CRA59162.1	X84684	Brassica oleracea	AA071830.1	X98244	Lavatera thuringiaca
CRA10173.1	AJ012796	Lycopersicon esculentum	CRA66900.2	X98244	Zea mays
AA070822.1	AF154421	Lycopersicon esculentum	CRA52903.1	X74947	Medicago sativa
AA064543.1	AF046543	Pyrus pyrifolia	AA075308.1	Y15036	Medicago truncatula
CRA09457.1	AJ011010	Cicer arietinum	CRA66901.1	X98245	Zea mays
AA067341.1	AF229794	Vigna radiata	CRA632468.1	AF308589	Ceratopteris richardii
CRA07236.1	AJ006771	Cicer arietinum	CRA72183.1	Y11348	Medicago sativa
CRA10064.1	AJ012578	Carica papaya	CRA632467.1	AF308588	Ceratopteris richardii
AA028739.1	AF079874	Carica papaya	SEQ ID NO. 1604		Oryza sativa
AA022429.1	AF184080	Prunus armeniaca	AA017067.1	AF234558	Oryza sativa
CRA06310.1	AJ005043	Cicer arietinum	AA089800.1	AB028185	Oryza sativa
AA045349.1	AF159124	Vitis vinifera	AA089799.1	AB028184	Oryza sativa
SEQ ID NO. 1602			AA089798.1	AB028183	Oryza sativa
AA086950.1	U10044	Pisum sativum	AA089797.1	AB028182	Oryza sativa
AA086952.1	U10046	Pisum sativum	AA089801.1	AB028186	Oryza sativa
CRA50035.1	X70702	Pisum sativum	AA068626.1	AF254124	Medicago truncatula
AA086951.1	U10045	Pisum sativum	AA089802.1	AB028187	Oryza sativa
AA086937.1	AB043975	Panax ginseng	AA078417.1	AB021178	Nicotiana tabacum
CRA57298.1	X30182	Solanum tuberosum	SEQ ID NO. 1606		Glycine soja
AA07298.1	X68202	Pyrobetis stellata	AA09209.1	U38247	Glycine max
AA086949.1	U10043	Pisum sativum	AA037440.1	AY007600	Glycine tomentella
SEQ ID NO. 1603			AA037451.1	AY007611	Glycine tomentella
AA01250.1	AF186832	Fragaria x ananassa	AA037451.1	AY007611	Glycine tomentella
AA033305.1	U95609	Gossypium hirsutum	AA037451.1	AY007606	Glycine tomentella
AA06492.1	AJ005347	Cicer arietinum	AA037441.1	AY007601	Glycine tomentella
CRA03710.1	X93308	Capsicum annuum	AA037443.1	AY007603	Glycine tomentella
CRA10261.1	AJ130956	Capsicum annuum	AA037444.1	AY007604	Glycine tomentella
CRA10210.1	AJ130829	Capsicum annuum	AA037445.1	AY007510	Glycine tomentella

[illegible]

RAE27282.1 AF122821 Capsicum annuum
 CRA43505.1 AF239051 Cicer arietinum
 CRA50648.1 X71657 Solanum melongena
 BRA84072.1 AB028152 Torenia hybrida
 BAA76380.1 AB023636 Glycyrrhiza echinata
 CRA72208.1 Y11404 Zea mays
 CRA57423.1 X81829 Zea mays
 BAB12433.1 AB025030 Coptis japonica

SEQ ID NO. 1620
 CRA41774.1 X59046 Oryza sativa
 BAA89049.1 L19762 Citrus unshiu
 RAA34196.1 AB029401 Lycopersicon esculentum
 BAA88905.1 AB022092 Citrus unshiu
 RAA28641.1 U73588 Gossypium hirsutum
 CRA49428.1 X69773 Vicia faba
 CRA09681.1 AF011535 Lycopersicon esculentum
 RAA97572.1 U24088 Solanum tuberosum
 CRA00593.1 AF011319 Lycopersicon esculentum
 CRA40794.1 AF011343 Medicago truncatula
 RAA17867.1 AF049487 Medicago sativa
 CRA40795.1 AF011364 Medicago truncatula
 CRA65640.1 X96939 Tulipa gesneriana
 RAA97571.1 U24087 Solanum tuberosum
 CRA63122.1 X92378 Ainus glutinosa
 RAA33514.1 L22296 Zea mays
 CRA65539.1 X96938 Tulipa gesneriana
 RAA41682.1 L03366 Oryza sativa
 CRA47593.1 Y15802 Hordeum vulgare
 CRA49551.1 X69931 Hordeum vulgare
 CRA76056.1 Y16090 Daucus carota
 CRA53081.1 X75332 Daucus carota
 RAA33515.1 L33244 Zea mays
 RAB20799.1 AB045710 Pyrus pyrifolia
 CRA03935.1 AF000153 Triticum aestivum
 RAC39323.1 AF030231 Glycine max
 BRA01108.1 D10266 Vigna radiata
 CRA09310.1 AF012080 Pisum sativum
 RAA28107.1 AF079651 Pisum sativum
 CRA32462.1 AF0311496 Pisum sativum
 CRA57881.1 X82504 Chenopodium rubrum

CMA26229.1 X02382 CMA26247.1 X02400
 CRA46017.1 X64770 Oryza sativa
 CRA58022.1 AFJ32000 Craterostigma plantagineum
 CRA78747.1 Z15028 Oryza sativa
 RAA85966.1 AF263384 Saccharum officinarum
 CRA45701.1 X65671 Hordeum vulgare
 BAA04543.1 AF001117 Triticum aestivum
 BAA88904.1 AB022091 Citrus unshiu
 BAA88981.1 AB025778 Citrus unshiu
 CRA04512.1 AF001071 Pisum sativum
 CRA76057.1 Y16091 Daucus carota
 CRA38021.1 AFJ31999 Craterostigma plantagineum
 CRA57499.1 X81974 Beta vulgaris
 CMA47264.1 X66728 Hordeum vulgare

SEQ ID NO. 1621
 RAB69317.1 AF012861 Petroselinum crispum
 RAA87216.1 AF231351 Nicotiana tabacum
 CRA67782.1 X99405 Nicotiana tabacum
 CRA52708.1 AF010712 Solanum tuberosum
 CRA56685.1 AFJ32346 Dunaliella bioculata
 CRA58775.1 X83923 Solanum tuberosum
 CRA03941.1 AF000184 Spinacia oleracea
 CRA03939.1 AF000182 Spinacia oleracea
 CRA03940.1 AF000183 Spinacia oleracea
 RAA01426.1 U18238 Spinacia oleracea
 CRA54542.1 X74421 Mesembryanthemum crystallinum
 RAA69318.1 AF012862 Solanum tuberosum
 RAA69319.1 AF012863 Petroselinum crispum
 CRA04992.1 AF001769 Nicotiana tabacum
 CRA04993.1 AF001770 Nicotiana tabacum
 BAA97662.1 AB029454 Triticum aestivum
 BAA97663.1 AB029455 Triticum aestivum
 RAA97664.1 AB029456 Triticum aestivum
 RAC23802.1 AF260736 Cucurbita pepo
 CRA66330.1 AFJ279688 Betula pendula
 BAA82155.1 AB011441 Triticum aestivum
 CRA66200.1 AF004900 Glycine max

Zea mays
 Zea mays
 Oryza sativa
 Craterostigma plantagineum
 Oryza sativa
 Oryza sativa
 Saccharum officinarum
 Hordeum vulgare
 Triticum aestivum
 Citrus unshiu
 Citrus unshiu
 Pisum sativum
 Daucus carota
 Craterostigma plantagineum
 Beta vulgaris
 Hordeum vulgare

Petroselinum crispum
 Nicotiana tabacum
 Nicotiana tabacum
 Solanum tuberosum
 Dunaliella bioculata
 Solanum tuberosum
 Spinacia oleracea
 Spinacia oleracea
 Nicotiana tabacum
 Spinacia oleracea
 Mesembryanthemum crystallinum
 Solanum tuberosum
 Solanum tuberosum
 Petroselinum crispum
 Petroselinum crispum
 Nicotiana tabacum
 Nicotiana tabacum
 Triticum aestivum
 Triticum aestivum
 Triticum aestivum
 Cucurbita pepo
 Betula pendula
 Triticum aestivum
 Glycine max

SEQ ID NO. 1623	Brassica napus	CMA81689.1	X83850	Beta vulgaris	CMA85730.1	X83850
CMA81689.1	Cucurbita sp.	227165	U64967	Beta vulgaris	RA053000.1	U64967
CMA50217.1	Cucurbita sp.	X70866	884379	Plantago major	CMA59113.1	884379
CMA78100.1	Zea mays	X70867	AF149981	Nicotiana tabacum	RA034610.1	AF149981
AAA33450.1	Zea mays	Z12114	X82275	Lycopersicon esculentum	RA057726.1	X82275
AAA33452.1	Zea mays	Z12107	AG09270.1	Lycopersicon esculentum	AG09270.1	AF116930
AAA33451.1	Zea mays	Z12106	CHAL2256.1	Ricinus communis	CHAL2256.1	AJ224951
AAA33451.1	Zea mays	Z12108	AA025923.1	Solanum tuberosum	AA025923.1	AJ237780
CMA78101.1	Zea mays	Z12115	RA076367.1	Daucus carota	RA076367.1	Y16766
CMA77645.1	Zea mays	Z11546	RA076368.1	Daucus carota	RA076368.1	Y16767
RA039827.1	Solanum tuberosum	U46136	CAC19688.1	Baucus carota	CAC19688.1	AJ303198
RAA66365.1	Chloroplast Pisum sativum	U21139	RA055269.1	Vitis vinifera	RA055269.1	AJ182445
RAA92724.1	Oryza sativa	AF001389	CMA75881.1	Hordium vulgare	CMA75881.1	AJ272308
RAA32980.1	Brassica napus	M35600	CAC33492.1	Ricinus communis	AJ310643	U87819
RAA93139.1	Secale cereale	M35600	BA024071.1	Oryza sativa	BA024071.1	D87819
RAA32379.1	Brassica napus	M35599	RAF90181.1	Lycopersicon esculentum	RAF90181.1	AF250050
CMA81736.1	Brassica napus	227222	RAF90187.1	Oryza sativa subsp. indica	RAF90187.1	AF156498
CAC68501.1	Brassica napus	AF030515	RAA83501.1	Lycopersicon esculentum	RAA83501.1	AB008464
FAE16318.1	Avicennia marina	AB049590	CAB75882.1	Zea mays	CAB75882.1	AJ272309
RAA39828.1	Solanum tuberosum	U46137	RAA45932.1	Hordium vulgare	RAA45932.1	AJ272309
RAA89836.1	Pseudotsuga menziesii	249756	BA076434.1	Betula pendula	BA076434.1	AF168771
RAA09989.1	Glycine max	AJ012318	BA076434.1	Cicer arietinum	BA076434.1	AB025006
SEQ ID NO. 1624	Ricinus communis	CMA63436.1	Y11209	Nicotiana tabacum	CMA72092.1	Y11209
CMA63436.1	Apium graveolens	Z11561	RA055566.1	Voitox carteri f. nagariensis	RA055566.1	AF110784
RAA45391.1	Apium graveolens	AF167416	RA049896.1	Chlamydomonas reinhardtii	RA049896.1	AF027727
RAA45390.1	Apium graveolens	AF167415	RA02069.1	Chlamydomonas reinhardtii	RA02069.1	AF036939
RAA89456.1	Daucus carota	AB036758	RA050541.1	Ricinus communis	RA050541.1	U41385
CMA76369.1	Daucus carota	Y16768	RA028260.1	Datisca glomerata	RA028260.1	AF131223
CAC19689.1	Daucus carota	AF0303199	CAC21223.1	Triticum turgidum subsp. durum	CAC21223.1	AJ277378
CAC99332.1	Apium graveolens	AF063400	CAC21231.1	Triticum turgidum subsp. durum	CAC21231.1	AJ277380
CMA47604.1	Spinacia oleracea	X67125	RAA19660.1	Triticum aestivum	RAA19660.1	U11496
AF65765.1	Euphorbia esula	AF242307	CAC21230.1	Triticum turgidum subsp. durum	CAC21230.1	AJ277379
RAA57727.1	Nicotiana tabacum	X82276	CAC21228.1	Triticum turgidum subsp. durum	CAC21228.1	AJ277377
RAA04294.1	Asarina bacillifera	AF191024	RAA92322.1	Oryza sativa	RAA92322.1	AB039278
CMA41024.1	Plantago major	X75764	CMA7575.1	Medicago sativa	CMA7575.1	Z11499
RAA07911.1	Vicia faba	233774	BA018780.1	Cucumis sativus	BA018780.1	AB047268
RAA04295.1	Solanum tuberosum	X69165	SEQ ID NO. 1626	Oryza sativa	RA050510.1	AF001129
CMA88165.1			RAA90510.1	Nicotiana tabacum	CMA343454.1	X61146

[illegible]

CRA660307.1	X97351	Populus balsamifera subsp.	SEQ ID NO. 1633	Cucumis sativus
BRAR62306.1	AB027752	Nicotiana tabacum	BAH85919.1	Lycopersicon esculentum
CRA94692.1	AJ24742	Ipomoea batatas	RA031396.1	Nicotiana tabacum
RAA92497.1	AF001383	Oryza sativa	BAH13718.1	Zea mays
RAA92422.1	AF001366	Oryza sativa	RAA118844	Lycopersicon esculentum
CRA40796.1	X57564	Amoracia rusticana	RAA37577.1	Pelargonium x hortorum
BAH06335.1	D30653	Populus kitakamiensis	RAA31123.1	Melus x domestica
BAH48184.1	L24120	Pinus ussatisissimum	RAA37576.1	Pelargonium x hortorum
CRA66034.1	X97348	Populus balsamifera subsp.	RAA97160.1	Nicotiana tabacum
trichocarpa			RAA02213.1	Lycopersicon esculentum
CRA65334.1	AJ250121	Picea abies	AAH85479.1	Lycopersicon esculentum
CRA62597.1	X91172	Raphanus sativus	AAE28893.1	Prunus persica
CRA66036.1	X97350	Populus balsamifera subsp.	RAA37136.1	Passiflora edulis
trichocarpa			RAA39497.1	Brassica oleracea
RAA63025.1	AF244922	Spinacia oleracea	RAA61919.1	Mangifera indica
CRA66035.1	X97349	Populus balsamifera subsp.	RAA02214.1	Lycopersicon esculentum
trichocarpa			BAH18937.1	Cucumis melo var. reticulatus
RAA98519.1	AF007211	Glycine max	BAH85817.1	Cucumis sativus
RAA06183.1	M37636	Arachis hypogaea	RAA39386.1	Cucumis sativus
BAH49176.1	D44400	Oryza sativa	RAA03598.1	Lycopersicon esculentum
CRA94619.1	AF014468	Oryza sativa	BAH72193.1	Vigna radiata
CRA71492.1	Y10466	Spinacia oleracea	BAH41773.1	Oryza sativa
CRA71493.1	Y10467	Spinacia oleracea	CRA06723.1	Pisum sativum
RAA06334.1	D30652	Populus kitakamiensis	RAA26699.1	Pisum sativum
RAA11852.1	D33224	Populus nigra	BAH37137.1	Phaseolus edulis
BAH7389.1	AB024439	Scutellaria baicalensis	RAA95918.1	Phaseolus edulis
CRA62615.1	X91232	Mercurialis annua	RAA12777.1	Cucumis sativus
RAA73427.1	AF149277	Phaseolus vulgaris	RAA6765.2	Solanum tuberosum
CRA62226.1	X90693	Medicago sativa	RAA08300.1	Nicotiana tabacum
RAA92967.1	AF001551	Oryza sativa	RAA61977.1	Musa acuminata
RAA02554.1	L37790	Stylosanthes humilis	RAA31157.1	Carica papaya
CRA62227.1	X90694	Medicago sativa	RAA38057.1	Rosa hybrid cultivar
RAA14143.1	D90115	Amoracia rusticana	RAA31157.1	Brassica oleracea
RAA92821.1	AF014470	Oryza sativa	RAA68819.1	Rumex palustris
RAA07241.1	D38051	Populus kitakamiensis	RAA96745.1	Rumex palustris
CRA99487.1	AJ276227	Hordeum vulgare	CRA76929.1	Dianthus carophyllus
CRA50897.1	X71593	Lycopersicon esculentum	RAA90551.1	Citrus sinensis
BAH03911.1	D16442	Oryza sativa	BAH90552.1	Prunus mume
CRA67121.1	Y19023	Lycopersicon esculentum		Prunus mume

CAC90633.1	AJ277743	Fagus sylvatica	BA34836.1	AF244693	Zea mays
CAC10358.1	AJ277086	Nicotiana tabacum	BA34837.1	AF244694	Zea mays
CAC10359.1	AJ277087	Nicotiana tabacum	BA34800.1	AF243365	Glycine max
CAC09575.1	AJ298987	Fagus sylvatica	BA34866.1	AF048978	Glycine max
CAC36697.1	AF075579	Mesembryanthemum crystallinum	BA32118.1	AF051214	Picea mariana
AA17804.1	AF092431	Lotus japonicus	BA22517.1	AF118924	Papaver somniferum
CRA71234.1	Y11607	Medicago sativa	BA22518.1	AF118925	Papaver somniferum
AA17805.1	AF092432	Lotus japonicus	BA34806.1	AF243371	Glycine max
CAC36698.1	AF075580	Mesembryanthemum crystallinum	CA04391.1	AF000923	Carica papaya
AA643835.1	AF213455	Zea mays	BA34833.1	AF244690	Zea mays
AA636699.1	AF075581	Mesembryanthemum crystallinum	CRA71784.1	Y10820	Glycine max
AA36700.1	AF075582	Mesembryanthemum crystallinum	BA34847.1	AF244704	Zea mays
AA11430.1	AJ277744	Fagus sylvatica	BA34848.1	AF118926	Papaver somniferum
AA33832.1	AF097667	Mesembryanthemum crystallinum	BA32519.1	AF118926	
AA33832.1	U81960	Zea mays	SEQ ID NO. 1636		
AA33551.1	AF079355	Mesembryanthemum crystallinum	BA37699.1	AF145730	Oryza sativa
AA36828.1	AF075603	Oryza sativa	BA33461.1	AB028073	Physcomitrella patens
CAC09576.1	AJ298988	Fagus sylvatica	AA01765.1	AF184278	Glycine max
			AA01764.2	AF184277	Glycine max
			BA33466.1	AB028078	Physcomitrella patens
			BA37118.1	Y17306	Lycopodium obscurum
			AA37482.1	AF268422	Brassica rapa subsp. pekinensis
			AA37489.1	AF145728	Oryza sativa
			BA021017.1	D26578	Daucus carota
			BA05624.1	D26575	Daucus carota
			BA33460.1	AB028072	Physcomitrella patens
			BA33464.1	AB028076	Physcomitrella patens
			BA33467.1	AB028079	Physcomitrella patens
			BA33465.1	AB028077	Physcomitrella patens
			BA05625.1	D26576	Daucus carota
			BA33468.1	AB028080	Physcomitrella patens
			BA05623.1	D26574	Daucus carota
			BA05622.1	D26573	Daucus carota
			AA37698.1	AF145729	Oryza sativa
			CA04421.1	X94449	Pimpinella brachycarpa
			CA044152.1	X94375	Pimpinella brachycarpa
			CA04491.1	X95193	Pimpinella brachycarpa
			BA33463.1	AB028075	Physcomitrella patens
			AA06728.1	AF005833	Cratogeomys plantaginum
			BA37699.1	AF145726	Oryza sativa
			CA05456.2	X95661	Oryza sativa

SEQ ID NO. 1635

AA34803.1	AF243368	Glycine max
AA34798.1	AF243363	Glycine max
AA64450.1	AF239928	Euphorbia esula
AA34807.1	AF243372	Glycine max
AA34796.1	AF243361	Glycine max
AA34797.1	AF243362	Glycine max
AA34801.1	AF243366	Glycine max
AA34804.1	AF243369	Glycine max
AA34809.1	AF243374	Glycine max
AA34808.1	AF243373	Glycine max
AA34810.1	AF243375	Glycine max
AA34844.1	AF244701	Zea mays
AA34805.1	AF243370	Glycine max
AA34831.1	AF244688	Zea mays
AA34832.1	AF244689	Zea mays
AA34849.1	AF244706	Zea mays
AA34802.1	AF243367	Glycine max
AA010448	AF010448	Alpecurus myosuroides
AA34829.1	AF244686	Zea mays
AA010449	AF010449	Alpecurus myosuroides
AA068430.1	J03679	Solanum tuberosum

AAAF9980.1	AF211193	Oryza sativa	SEQ ID NO. 1637	CAA30261.1	X07280	Nicotiana plumbaginifolia
AAK31270.1	AC079890	Oryza sativa		AAAD0384.1	U72253	Oryza sativa
CAA63222.1	X92489	Glycine max		AAH86794.1	U01900	Solanum tuberosum
CAA06717.1	AJ005820	Craterostigma plantaginifolium		AAAC32939.1	M62907	Hordeum vulgare
SEQ ID NO. 1637				AAAC14399.1	AF030771	Hevea brasiliensis
AAAD16016.1	AF080545	Nepenthes alata		AAH87456.1	U22147	Oryza sativa
SEQ ID NO. 1638				AAAD0381.1	U72250	Nicotiana tabacum
CAA65987.2	X97322	Pisum sativum		AAAD0381.1	AF141654	Lycopersicon esculentum
BAAD7209.1	D38012	Oryza sativa		AAAD03617.1	M80604	Hevea brasiliensis
SEQ ID NO. 1639				CAA38443.1	AJ133470	Nicotiana tabacum
AAAC49528.1	U56834	Petroselinum crispum		AAAG3542.1	M59443	Nicotiana tabacum
AAAD27591.1	AF121354	Petroselinum crispum		AAAG3539.1	M60402	Nicotiana tabacum
BAAD7358.1	AB020023	Nicotiana tabacum		AAAG3541.1	M59442	Nicotiana tabacum
AAAD16139.1	AF096299	Nicotiana tabacum		AAAG3540.1	M60403	Nicotiana tabacum
AAAC49526.1	U48831	Avena fatua		CAA37289.1	X53129	Phaseolus vulgaris
AAAC49529.1	U58540	Petroselinum crispum		CAA37285.1	X81560	Nicotiana tabacum
AAAD16138.1	AF096298	Nicotiana tabacum		CAA91554.1	AJ277900	Vitis vinifera
AAAC37515.1	L44134	Cucumis sativus		AAAG19111.1	U01902	Solanum tuberosum
CAA98331.1	Z48431	Avena fatua		AAAG6541.1	AF030166	Oryza sativa
AAAF61864.1	AF193771	Nicotiana tabacum		AAAC39322.1	U96096	Hordeum vulgare
BAAD71969.1	AB035271	Matricaria chamomilla		AAAD33880.1	AF141653	Nicotiana tabacum
AAAF61863.1	AF193770	Nicotiana tabacum		SEQ ID NO. 1641		
SEQ ID NO. 1640				AAAF97510.1	AF246266	Lycopersicon esculentum
AAAD10386.1	U72255	Oryza sativa		AAAD30549.1	AF136360	Lycopersicon esculentum
BAAD89481.1	AB029462	Salix gligiana		AAAF97509.1	AF246266	Lycopersicon esculentum
CAA85903.1	AJ251646	Pisum sativum		AAAD30548.1	AF136579	Lycopersicon esculentum
CAA49513.1	X69887	Brassica napus		AAAC17441.1	AF065444	Pisum sativum
AAAB2772.2	AF001523	Musa acuminata		AAAF61374.1	AF133267	Matricaria chamomilla
AAAF08679.1	AF004838	Musa acuminata		AAAG09633.1	AY007281	Medicago truncatula
CAA82271.1	Z28697	Nicotiana tabacum		SEQ ID NO. 1642		
AAAL8928.1	U01901	Solanum tuberosum		AAAG43549.1	AF211531	Nicotiana tabacum
AAAL9114.1	U30323	Solanum tuberosum		AAAG43548.1	AF211530	Nicotiana tabacum
AAAG09953.1	U30323	Triticum aestivum		CAA96899.1	AJ251249	Catharanthus roseus
AAAG03618.1	M80608	Lycopersicon esculentum		CAA96900.1	AJ251250	Catharanthus roseus
AAAS1643.1	M23120	Nicotiana plumbaginifolia		AAAF63205.1	AF245119	Mesembryanthemum crystallinum
AAAS34078.1	M63654	Nicotiana plumbaginifolia		BAAB16083.1	AF036883	Oryza sativa
				BAAB03248.1	AB037183	Oryza sativa
				CAAC22822.1	AJ299252	Nicotiana tabacum
				BAAB07321.1	D38123	Nicotiana tabacum

AAE23099.1	AF193803	Oryza sativa	AAC2034.1	AF023472	Hordeum vulgare
AAE43545.1	AF211527	Nicotiana tabacum	AAD01600.1	AF016713	Lycopersicon esculentum
AAC62619.1	AF057373	Nicotiana tabacum	AAE07875.1	AF140606	Oryza sativa
			AAE20002.1	AF213936	Prunus dulcis
SEQ ID NO. 1643			CAC07206.1	AJ278966	Brassica napus
AAA74360.1	L33912	Zea mays	BAB19760.1	AB052788	Glycine max
AAC05984.1	AF049706	Chloroplast Glycine max	BAB19757.1	AB052785	Glycine max
AAC05983.1	AF049708	Glycine max	BAB19756.1	AB052784	Glycine max
BAAL1417.1	D78573	Oryza sativa	CAC93316.1	Z69370	Lotus japonicus
AAA74361.1	L33913	Zea mays	AAD01601.1	AF080545	Cucumis sativus
AAAI6972.1	L11529	Daucus carota	AAD42860.1	AF154930	Nepenthes alata
RAAD1796.1	AF135862	Glycine max			Prunus dulcis
BAA5630.1	AB042521	Oryza sativa	SEQ ID NO. 1646		
			AAD00929.1	U96736	Selaginella lepidophylla
SEQ ID NO. 1644					
AAE43545.1	AF211527	Nicotiana tabacum	SEQ ID NO. 1647		
AAE63205.1	AF245119	Mesembryanthemum crystallinum	AAC4926.1	U19924	Zinnia elegans
BAE07321.1	D58423	Nicotiana tabacum	AAE21135.1	U13256	Nicotiana glauca
BAE07322.1	AB016264	Nicotiana glauca	CAC10130.1	AJ012689	Cicuta arvensis
BAE07068.1	AB035270	Matricaria chamomilla	AAE2615.1	AF157011	Prunus dulcis
BAE07124.1	AB016266	Nicotiana glauca	AAG09465.1	AF227522	Prunus dulcis
CAB96900.1	AJ251250	Catharanthus roseus	BAE08475.1	D49529	Pyrus pyrifolia
CAB96899.1	AJ251249	Catharanthus roseus	AAC9325.1	U19923	Zinnia elegans
AAC62619.1	AF057373	Nicotiana tabacum	CAC55896.1	X79338	Lycopersicon esculentum
AAE37123.1	AF071893	Prunus armeniaca	CAB40353.1	Y17446	Lycopersicon esculentum
AAE24587.1	AF071893	Prunus armeniaca	CAC55896.1	X79337	Lycopersicon esculentum
CAC12822.1	AJ295252	Nicotiana glauca	AAE58719.1	AF000940	Hordeum vulgare
AAE76898.1	AF274033	Atropis hortensis	BAE19804.1	AB052842	Oryza sativa
AAE00708.1	U91857	Stylosanthes hamata	BAE19805.1	AB052844	Oryza sativa
BAE76734.1	AB024575	Oryza sativa	CAB40354.1	Y17445	Lycopersicon esculentum
BAE03248.1	AB037183	Oryza sativa	BAE58718.1	AF000939	Hordeum vulgare
BAE16083.1	AB036883	Oryza sativa	BAE10891.1	D64011	Luffa cylindrica
AAE23099.1	AF193803	Oryza sativa	BAE10892.1	D64012	Luffa cylindrica
AAE05606.1	AF190770	Oryza sativa	AAE13364.1	AF031533	Petunia integrifolia
BAE07838.1	AB023482	Oryza sativa	BAE08474.1	D49528	Pyrus pyrifolia
AAE43548.1	AF211530	Nicotiana tabacum	AAE08466.1	U07363	Petunia x hybrida
AAE43549.1	AF211531	Nicotiana tabacum	AAE15437.1	AF239910	Petunia axillaris
BAE9376.1	AF002526	Oryza sativa	AAE36980.1	AF232304	Solanum chacoense
AAE01089.1	AF298231	Hordeum vulgare			
SEQ ID NO. 1645					

AAA0465.1	U07362	Petunia x hybrida	RAG34840.1	AF244697	Zea mays
BAA24018.1	D63888	Nicotiana glauca	RAG34848.1	AF244705	Zea mays
AF05729.1	AF191732	Solanum chacoense	RAG34833.1	AF244690	Zea mays
RAA56217.1	AF176533	Solanum chacoense	RAG32118.1	AF051214	Picea mariana
SEQ ID NO. 1649			RAG101259.1	AF001259	Aegilops tauschii
AAAC49528.1	U56834	Petroselinum crispum	RAG34850.1	AF244707	Zea mays
BBA47358.1	AF020023	Nicotiana tabacum	RAG34830.1	AF244687	Zea mays
AAAD16139.1	AF096299	Nicotiana tabacum	RAG34839.1	AF244696	Zea mays
AAAD27591.1	AF121354	Petroselinum crispum	CA09188.1	AF010449	Alopecurus myosuroides
AAAC37515.1	L44134	Cucumis sativus	RAG34835.1	AF244692	Zea mays
AAAC49527.1	U48831	Petroselinum crispum	RAG34828.1	AF244685	Zea mays
CAA88326.1	Z48429	Avena fatua	CA09187.1	AF010448	Alopecurus myosuroides
AAAC49529.1	U58540	Petroselinum crispum	CA09189.1	AF010450	Alopecurus myosuroides
CA088331.1	Z48431	Avena fatua	RAG34847.1	AF244703	Zea mays
AD16138.1	AF096298	Nicotiana tabacum	RAG34846.1	AF244704	Zea mays
AF161864.1	AF193771	Nicotiana tabacum	RAG34844.1	AF244691	Zea mays
BBA87069.1	AB035271	Matricaria chamomilla	RAG34841.1	AF244698	Zea mays
AAAF61863.1	AF193770	Nicotiana tabacum	AGS34645.1	AF244702	Glycine max
SEQ ID NO. 1650			AGS34797.1	AF243362	Glycine max
BA85440.1	AP000616	Orzya sativa	RAG34798.1	AF243363	Glycine max
CA053493.1	A0245900	Orzya sativa	RAG34809.1	AF243374	Picea mariana
SEQ ID NO. 1654			CA032139.1	AF051238	Zea mays
AF178990	AF239928	Vitis riparia	RAG34844.1	AF244701	Zea mays
RAA00555.1	U54704	Phaseolus vulgaris	RAG34843.1	AF244700	Zea mays
SEQ ID NO. 1659			AGS34843.1	AF244701	Zea mays
CAAF2403.1	AF212183	Nicotiana tabacum	BA85440.1	AF0000392	Lotus japonicus
CA068848.1	Y075632	Nicotiana tabacum	AD001600.1	AF016713	Lycopersicon esculentum
RA097367.1	AF039532	Orzya sativa	CA023034.1	AF023472	Hordeum vulgare
SEQ ID NO. 1665			AF20002.1	AF213936	Prunus dulcis
AAAF22517.1	AF118924	Papaver somniferum	AF07875.1	AF140606	Orzya sativa
AAAF22518.1	AF118925	Papaver somniferum	CA07206.1	AF278966	Brassica napus
AAAF22519.1	AF118926	Papaver somniferum	CA033316.1	Z69370	Cucumis sativus
AAAF29773.1	AF159229	Gossypium hirsutum	BA019757.1	AB052785	Glycine max
AAAG34838.1	AF244695	Zea mays	BA019760.1	AB052788	Glycine max
AAAG34795.1	AF243360	Glycine max	BA019756.1	AB052784	Glycine max
AAAG34842.1	AF244699	Zea mays	AD42601.1	AF080455	Nepenthes alata
			RAA00555.1	AF154930	Prunus dulcis

SEQ ID NO. 1668	Brassica napus	CAA09419.1	AJ010942	Lycopersicon esculentum
AAK21965.1	Phaseolus vulgaris	CAB68813.1	Y07520	Chlorella kessleri
AA021872.1	Oryza sativa	CAB52689.1	AJ132224	Lycopersicon esculentum
AAK33915.1	Oryza sativa	BAB19664.1	AB052885	Oryza sativa
BAH82566.1	Populus nigra	CAA33036.1	X55349	Chlorella kessleri
AAK1674.1	Lophopyrum elongatum	AAW7324.1	X68856	Nicotiana tabacum
AAK1674.1	Lophopyrum elongatum	AAW79761.1	L08196	Ricinus communis
AAK3090.1	Oryza sativa	AAW79657.1	L08188	Ricinus communis
AAK93834.1	Zea mays	CA05079.1	283829	Picea abies
AAK6661.1	Nicotiana tabacum	CAK51392.1	X75440	Chlorella kessleri
AAK2966.1	Nicotiana tabacum	CAK07077.1	Y09590	Vitis vinifera
AAK6971.1	Zea mays	CAK04511.1	AJ001061	Vitis vinifera
AAK3428.1	Oryza sativa	BAK19863.1	293775	Vicia faba
AAK23542.1	Ipomoea trifida	BAK19862.1	AB052884	Oryza sativa
AAK94516.1	Oryza sativa	BAK06594.1	U38651	Oryza sativa
AAK73134.1	Brassica oleracea	BAH85398.1	AF000615	Medicago truncatula
AAK92954.1	Oryza sativa	AA053054.1	AF173635	Oryza sativa
AAK16628.1	Brassica napus	CAK52690.1	AJ132225	Beta vulgaris
AAK51834.1	Oryza sativa	SEQ ID NO. 1673		Lycopersicon esculentum
AAK06538.1	Nicotiana tabacum	CAK0510.1	AF285172	Phaseolus vulgaris
AAK73133.1	Brassica oleracea	CAK97692.1	Z73295	Catharanthus roseus
AAK89179.1	Brassica napus subsp. napus	CAB51834.1	00069	Oryza sativa
AAK245479	Brassica napus	AAK21965.1	AF028699	Brassica napus
AAK33009.1	Brassica oleracea	AAK91323.1	AF244889	Glycine max
AAK92837.1	Brassica oleracea	AAK59906.1	AF197947	Glycine max
AAK33000.1	Brassica oleracea	AAK91324.1	AF244890	Glycine max
CAK79355.1	Brassica oleracea	AAK91322.1	AF244888	Glycine max
CAK74661.1	Brassica oleracea	AAK59905.1	AF197946	Glycine max
CAK74661.1	Brassica rapa	AAK1567.1	AF318491	Lycopersicon hirsutum
CAK74661.1	Brassica rapa	AAK1569.1	AF318493	Lycopersicon hirsutum
CAK74661.1	Brassica oleracea	AAK6306.1	AF220602	Lycopersicon pimpinellifolium
CAK74661.1	Brassica oleracea	AAK48914.1	U02271	Lycopersicon pimpinellifolium
CAK74661.1	Brassica rapa	BAK47423.1	U59315	Lycopersicon hirsutum
CAK74661.1	Brassica rapa	BAK1566.1	AF318490	Lycopersicon hirsutum
CAK74661.1	Brassica rapa	AAK36318.1	AF053127	Malus x domestica
CAK74661.1	Brassica rapa	AAK09771.1	U67422	Zea mays
CAK74661.1	Brassica rapa	AAK7421.1	U59316	Lycopersicon esculentum
CAK74661.1	Brassica rapa	AAK76313.1	AF220603	Lycopersicon esculentum
CAK74661.1	Brassica rapa	AAK03090.1	AC072405	Oryza sativa
SEQ ID NO. 1669	Apium graveolens var. dulce			
AAK43998.1	Nicotiana tabacum	AF215037		
AAK74566.1	Spinacia oleracea	AF215852		
AAK74565.1	Spinacia oleracea	AF215851		
AAK74567.1	Solanum tuberosum	AF215853		
AAK74568.1	Zea mays	AF215854		

AA054936.1	AF141374	Petroselinum crispum	AB041324.1	U03591	Medicago sativa
AA050131.1	AF147091	Fragaria x ananassa	CHC17793.1	AJ031671	Nicotiana sylvestris
AA05376.1	AF105426	Cynodon dactylon	AAA14325.1	U03592	Medicago sativa
BAA95846.1	AF002070	Oryza sativa	AA032263.1	S43926	Phaseolus vulgaris
AAA32986.1	M95835	Brassica napus	AAA33756.1	M13968	Phaseolus vulgaris
AA069783.1	AF135143	Arabis lemmonii	CRA35945.1	X51599	Nicotiana tabacum
AA069775.1	AF135143	Arabis lemmonii	AAA34070.1	M15173	Nicotiana tabacum
AA069792.1	AF135152	Arabis parshii	CRA45822.1	X64519	Nicotiana tabacum
AA05375.1	AF105425	Cynodon dactylon			
AA069785.1	AF135145	Arabis lignifera	SEQ ID NO. 1680		
AA069770.1	AF135130	Arabis holboellii	BAA5400.1	AF000615	Oryza sativa
AA069781.1	AF135141	Arabis gunnisoniana	CAB06083.1	Z83834	Hordeum vulgare
AA069777.1	AF135137	Arabis secunda	CMA74909.1	Y14573	Hordeum vulgare
AA069790.1	AF135150	Arabis microphylla	CMA06487.1	AJ005341	Linum usitatissimum
AA069787.1	AF135147	Arabis lignifera			
AA069772.1	AF135132	Arabis gunnisoniana	SEQ ID NO. 1681		
AA069782.1	AF135142	Halimolobos periplexa var. periplexa	BAB22107.1	AB022693	Nicotiana tabacum
AA069784.1	AF135144	Arabis lemmonii	AAC31556.1	AF008595	Pimpinella brachycarpa
AA069788.1	AF135148	Oryza sativa	AA055974.1	AF121353	Petroselinum crispum
BAA03750.1	D16222	Oryza sativa	BAA77383.1	AB020590	Nicotiana tabacum
AA069776.1	AF135136	Arabis secunda	AAC49527.1	U48831	Petroselinum crispum
CRA40107.1	X56787	Oryza sativa	CRA88326.1	Z48429	Avena fatua
BAB13369.1	AB048531	Psophocarpus tetragonolobus	AA016139.1	AF096299	Nicotiana tabacum
AA069778.1	AF135138	Arabis glabra	BA066031.1	AB026890	Nicotiana tabacum
AA069786.1	AF135146	Arabis lignifera	AAC37515.1	L44134	Cucumis sativus
BAA82826.1	AB023464	Arabis gemmifera	AA073898.1	AF193802	Oryza sativa
AA069773.1	AF135133	Arabis blepharophylla	AA016138.1	AF096298	Nicotiana tabacum
AA069791.1	AF135151	Arabis microphylla	AAC49529.1	U58540	Petroselinum crispum
AA069793.1	AF135153	Arabis parshii	CRA88331.1	Z48431	Avena fatua
CRA39535.1	X56063	Oryza sativa	AAC49528.1	U56834	Petroselinum crispum
BAA03749.1	D16221	Oryza sativa	BA035658.1	AF204925	Petroselinum crispum
AA069789.1	AF135149	Arabis microphylla	BAB16432.1	AB041520	Nicotiana tabacum
CRA71402.1	Y10373	Medicago truncatula	BAA77358.1	AF202023	Nicotiana tabacum
AAC16010.1	AF061805	Elaeagnus umbellata	AA035659.1	AF204926	Petroselinum crispum
CRA33826.1	X76041	Triticum aestivum	AA077591.1	AF121354	Petroselinum crispum
BAA33971.1	AB006892	Nicotiana tabacum	CBA66338.1	AJ279497	Setula pendula
CRA47921.1	X76793	Solanum tuberosum	AA016864.1	AF193771	Nicotiana tabacum
AA069780.1	AF135140	Arabis glabra	BAA87069.1	AB035271	Matricaria chamomilla
BAB18519.1	AB051578	Secale cereale	AA016863.1	AF193770	Nicotiana tabacum
AAA51377.1	L37289	Oryza sativa	SEQ ID NO. 1682		

[illegible]

L42465	AAA845367.1	SEQ ID NO. 1696	Picea glauca	Brassicaceae	Y12530
W72395	AAA34267.1		Triticum aestivum	Brassicaceae	Y18259
				Brassicaceae	Y18260
				Brassicaceae	Y14285
				Brassicaceae	Y14286
				Brassicaceae	Y14287
				Brassicaceae	Y14288
				Brassicaceae	Y14289
				Brassicaceae	Y14290
				Brassicaceae	Y14291
				Brassicaceae	Y14292
				Brassicaceae	Y14293
				Brassicaceae	Y14294
				Brassicaceae	Y14295
				Brassicaceae	Y14296
				Brassicaceae	Y14297
				Brassicaceae	Y14298
				Brassicaceae	Y14299
				Brassicaceae	Y14300
				Brassicaceae	Y14301
				Brassicaceae	Y14302
				Brassicaceae	Y14303
				Brassicaceae	Y14304
				Brassicaceae	Y14305
				Brassicaceae	Y14306
				Brassicaceae	Y14307
				Brassicaceae	Y14308
				Brassicaceae	Y14309
				Brassicaceae	Y14310
				Brassicaceae	Y14311
				Brassicaceae	Y14312
				Brassicaceae	Y14313
				Brassicaceae	Y14314
				Brassicaceae	Y14315
				Brassicaceae	Y14316
				Brassicaceae	Y14317
				Brassicaceae	Y14318
				Brassicaceae	Y14319
				Brassicaceae	Y14320
				Brassicaceae	Y14321
				Brassicaceae	Y14322
				Brassicaceae	Y14323
				Brassicaceae	Y14324
				Brassicaceae	Y14325
				Brassicaceae	Y14326
				Brassicaceae	Y14327
				Brassicaceae	Y14328
				Brassicaceae	Y14329
				Brassicaceae	Y14330
				Brassicaceae	Y14331
				Brassicaceae	Y14332
				Brassicaceae	Y14333
				Brassicaceae	Y14334
				Brassicaceae	Y14335
				Brassicaceae	Y14336
				Brassicaceae	Y14337
				Brassicaceae	Y14338
				Brassicaceae	Y14339
				Brassicaceae	Y14340
				Brassicaceae	Y14341
				Brassicaceae	Y14342
				Brassicaceae	Y14343
				Brassicaceae	Y14344
				Brassicaceae	Y14345
				Brassicaceae	Y14346
				Brassicaceae	Y14347
				Brassicaceae	Y14348
				Brassicaceae	Y14349
				Brassicaceae	Y14350
				Brassicaceae	Y14351
				Brassicaceae	Y14352
				Brassicaceae	Y14353
				Brassicaceae	Y14354
				Brassicaceae	Y14355
				Brassicaceae	Y14356
				Brassicaceae	Y14357
				Brassicaceae	Y14358
				Brassicaceae	Y14359
				Brassicaceae	Y14360
				Brassicaceae	Y14361
				Brassicaceae	Y14362
				Brassicaceae	Y14363
				Brassicaceae	Y14364
				Brassicaceae	Y14365
				Brassicaceae	Y14366
				Brassicaceae	Y14367
				Brassicaceae	Y14368
				Brassicaceae	Y14369
				Brassicaceae	Y14370
				Brassicaceae	Y14371
				Brassicaceae	Y14372
				Brassicaceae	Y14373
				Brassicaceae	Y14374
				Brassicaceae	Y14375
				Brassicaceae	Y14376
				Brassicaceae	Y14377

CMA66037.1	X97351	Populus balsamifera subsp. trichocarpa	CMA42794.1	AJ238754	Citrus clementina x Citrus
AA037430.1	AF149280	Phaseolus vulgaris	EA000886.1	D10002	Pisum sativum
BA006335.1	D30653	Populus kitakamiensis	EA000887.1	D10003	Pisum sativum
CMA66034.1	X97348	Populus balsamifera subsp. trichocarpa	BA067733.1	U43338	Citrus limon
AA020554.1	L37790	Stylosanthes humilis	AAAF4024.1	AF237855	Rubus idaeus
BA007241.1	D38051	Populus kitakamiensis	AAAF17993.1	M91192	Trifolium subterraneum
BA006334.1	D30652	Populus kitakamiensis	CMA57057.1	X81159	Petroselinum crispum
CMA66036.1	X97350	Populus balsamifera subsp. trichocarpa	AAAF40223.1	AF237954	Rubus idaeus
BA011853.1	D63225	Populus nigra	CMA68938.1	Y07654	Petroselinum crispum
CMA94692.1	AJ242742	Ipomoea batatas	CMA57056.1	X81158	Petroselinum crispum
BA032967.1	AF001551	Oryza sativa	CMA660719.1	AJ250836	Cicer arvense
CMA62226.1	X30693	Medicago sativa	BA078457.1	AF036948	Digitalis lanata
BA011852.1	D63224	Populus nigra	BA023367.1	D95850	Prunus avium
BA005277.1	AF049881	Linum usitatissimum	CMA68256.1	X99997	Daucus carota
BA077389.1	AB024439	Scutellaria baicalensis	BA033805.1	L11147	Bromheadia finlaysoniana
BA07602.1	L07554	Linum usitatissimum	BA024928.1	D93075	Populus x generosa
BA08519.1	AF007211	Glycyne max	CMA44169.1	X38180	Lithospermum erythrorhizon
CMA66035.1	X97349	Populus balsamifera subsp. trichocarpa	BA03476.1	M90692	Oryza sativa subsp. japonica
AA04796.1	X57564	Amoracia rusticana	EA007860.1	D43802	Lycopersicon esculentum
CMA59487.1	X85230	Triticum aestivum	AA04889.1	U39792	Populus kitakamiensis
BA048184.1	L24120	Linum usitatissimum	CMA73065.1	Y12461	Pinus taeda
BA008499.1	D49551	Oryza sativa	BA095629.1	AB042520	Helianthus annuus
CMA62227.1	X30694	Medicago sativa	BA025643.1	D76596	Catharanthus roseus
AA037427.1	AF149277	Phaseolus vulgaris	BA024929.1	D93076	Camellia sinensis
BA006183.1	M37636	Arachis hypogaea	BA021643.1	D30656	Lithospermum erythrorhizon
BA077388.1	AB024438	Scutellaria baicalensis	CMA37129.1	X52953	Populus kitakamiensis
CMA49819.1	AF014468	Oryza sativa	AA034122.1	M84466	Glycyne max
CA071493.1	Y10467	Spinacia oleracea	BA022948.1	AB008200	Nicotiana tabacum
CMA62597.1	X91172	Raphanus sativus	BA099500.1	L36822	Nicotiana tabacum
BA003911.1	D16442	Oryza sativa	CMA42793.1	AJ238753	Stylosanthes humilis
BA049821.1	AF014470	Spinacia oleracea	EA000886.1	D10002	Citrus clementina x Citrus
CMA71491.1	Y10465	Spinacia oleracea	EA000887.1	D10003	Ipomoea nil
SEQ ID NO. 1713			BA067733.1	M91192	Nicotiana tabacum
BA000885.1	D10001	Pisum sativum	BA022947.1	AB008199	Nicotiana tabacum
AA015640.1	AF326116	Agastache rugosa	BA023947.1	M83314	Lycopersicon esculentum
			BA011459.1	D78640	Ipomoea batatas
			BA033389.1	M29232	Ipomoea batatas

[illegible]

CAB60838.1	AJ002590	Lycopersicon esculentum	BR90357.1	AF001080	Oryza sativa
CAB09769.1	AJ011776	Chenopodium rubrum	BR95438.1	AP000616	Oryza sativa
CAB40541.1	AJ132930	Medicago sativa	BR90806.1	AP001168	Oryza sativa
CAB71244.1	Y10162	Chenopodium rubrum			
CAB09852.1	AJ011892	Nicotiana tabacum	SEQ ID NO. 1729		
CAB61221.1	AJ250396	Antirrhinum majus	BA94619.1	AF032386	Nicotiana tabacum
CAB63540.1	X92964	Nicotiana tabacum			
CAB48675.1	X68741	Medicago sativa	SEQ ID NO. 1730		
CAB46643.1	AJ243453	Lycopersicon esculentum	BA97366.1	AF039531	Oryza sativa
BR96629.1	AF024987	Oryza sativa			
BR20426.1	D99636	Nicotiana tabacum	SEQ ID NO. 1731		
CAB91558.1	237978	Nicotiana tabacum	BR90304.1	DI3987	Brassica napus
CAB63541.1	X92965	Nicotiana tabacum	BR90714.1	AF008939	Gossypium hirsutum
CAB77269.1	AJ133722	Pisum sativum	CAB8829.1	Z48966	Flavaria pringlei
CAB53753.1	X93467	Nicotiana tabacum	RA917619.1	AF248080	Flavaria trinervia
BR920410.1	D96385	Catharanthus roseus	CAB62469.1	X90982	Solanum tuberosum
RA961889.1	U24194	Lupinus luteus	CAB47437.1	X67053	Solanum tuberosum
RA931790.1	AF126107	Lupinus luteus	CAB45505.1	X64144	Flavaria pringlei
CAB41232.1	Z26331	Glycine max	RA917618.1	AF248079	Flavaria trinervia
CAB44632.1	X62820	Glycine max	CAB41758.1	X99016	Nicotiana tabacum
CAB44188.1	X62303	Glycine max	BR923419.1	AF008540	Glycine max
RA950013.1	U50064	Zea mays	CAB65171.1	AJ243417	Lycopersicon esculentum
CAB57556.1	X92036	Oryza sativa	RA931452.1	AF135371	Lotus corniculatus
BR909467.1	D50871	Glycine max	CAB65170.1	AJ243416	Lycopersicon esculentum
CAB46642.1	AJ243452	Lycopersicon esculentum	BR91560.1	DI0717	Glycine max
BR933154.1	AB008189	Pisum sativum	AB918633.1	I49175	Amaranthus hypochondriacus
AAC24245.1	U44957	Lupinus luteus	CAB55700.1	X79090	Picea abies
RA931791.1	AF126108	Lupinus luteus	CAC28225.1	AJ286750	Sesbania rostrata
CAB44631.1	X62819	Daucus carota	CAB43601.1	X61304	Flavaria trinervia
BR920412.1	D96387	Catharanthus roseus	CAB09807.1	AJ011844	Solanum tuberosum
CAB71243.1	Y10161	Chenopodium rubrum	CAB01072.1	Z25853	Flavaria australasica
CAB99990.1	Z75660	Sesbania rostrata	RA933164.1	M96661	Saccharum sp.
BR91660.1	L25406	Brassica napus	BR903209.1	DI33988	Glycine max
CAB46644.1	AJ243454	Lycopersicon esculentum	CAB45504.1	X64143	Amaranthus hypochondriacus
RA920236.1	U10076	Zea mays	RA928444.1	AF248382	Flavaria trinervia
CAB589596.1	AJ250315	Petunia x hybrida	CAB31356.1	X13660	Phaseolus vulgaris
			AB94618.1	M93086	Mesembryanthemum crystallinum
SEQ ID NO. 1728			AB91903.1	L39371	Medicago sativa
RA933550.1	AF211532	Nicotiana tabacum	CAB42288.1	AF0268091	Chloris gayana
BR978746.1	AB023482	Oryza sativa			Vicia faba
BA996875.1	AB045121	Oryza sativa			

[illegible]

BAR05546.1	D26547	Oryza sativa	RAA51643.1	M23120	Nicotiana plumbaginifolia
BAR04964.1	D21836	Oryza sativa	RAA75456.1	U22147	Hevea brasiliensis
BAR051522.1	U92541	Oryza sativa	CAB38443.1	AA1133470	Hevea brasiliensis
ADN49232.1	AF159387	Lolium perenne	AAH03618.1	M80608	Lycopersicon esculentum
ADN49232.1	AF186240	Secale cereale	AAH18928.1	U01901	Solanum tuberosum
ADN49231.1	AF159386	Secale cereale	AAH19114.1	AF067863	Solanum tuberosum
ADN49230.1	AF159385	Hordeum bulbosum	CAG2278.1	Z88154	Gossypium hirsutum
ADN49234.1	AF159389	Phalaris coarctescens	AAH24921.1	AF311749	Hevea brasiliensis
ADN49233.1	AF159388	Phalaris coarctescens	AAH63539.1	M60402	Nicotiana tabacum
BAR339913.1	AF002912	Oryza sativa	AAH63540.1	M60403	Nicotiana tabacum
CAA55399.1	X78822	Chlamydomonas reinhardtii	AAH88794.1	U01900	Solanum tuberosum
CAA56850.1	X80887	Chlamydomonas reinhardtii	AAH63541.1	M59442	Nicotiana tabacum
ADN33596.1	AF133127	Hevea brasiliensis	AAH82772.2	AF001523	Musa acuminata
CAA55826.1	X51462	Spinacia oleracea	CAA37289.1	X53129	Phaseolus vulgaris
CAA55827.1	X51463	Spinacia oleracea	AAH08679.1	AF004838	Musa acuminata
CAA55098.1	X63537	Pisum sativum	AAH33881.1	AF141654	Nicotiana tabacum
CAA49357.1	U35830	Pisum sativum	AAH33880.1	AF141653	Nicotiana tabacum
RAC19392.1	AF069314	Mesembryanthemum crystallinum	AAH34082.1	M20620	Nicotiana tabacum
RAC04671.1	AF018174	Brassica napus	AAH19111.1	U01902	Solanum tuberosum
RAH47556.1	X97141	Mesembryanthemum crystallinum	CAA57255.1	X81560	Nicotiana tabacum
CAA53900.1	X76269	Pisum sativum	AAH34053.1	M60464	Nicotiana tabacum
RAH49358.1	U35831	Pisum sativum	RAH63542.1	M59443	Nicotiana tabacum
CAA33082.1	X14959	Spinacia oleracea	AAH2498.1	S31479	Pisum sativum
RAH06736.1	AH005841	Oryza sativa	AAH41551.1	U77179	Medicago sativa subsp. sativa
CAA55398.1	X78821	Chlamydomonas reinhardtii	AAH03864.1	U72253	Oryza sativa
CAA56851.1	X80888	Chlamydomonas reinhardtii	AAH03617.1	M80604	Lycopersicon esculentum
CAA44209.1	X62335	Chlamydomonas reinhardtii			
CAA06735.1	AH005840	Triticum aestivum			
RAH52409.1	U76831	Brassica napus			
ADN45358.1	AF160870	Brassica napus			
		Prunus persica	SEQ ID NO. 1738		
AAH92013.1	U49454	Brassica rapa	BAH19402.1	AB000408	Populus kitakamiensis
CAA54952.1	X77990	Populus x Gmelensis	AAH28973.1	U20736	Medicago sativa subsp. sativa
AFH33405.1	AF230109	Glycine max	CAA12198.1	AJ224894	Populus balsamifera subsp.
AAH33946.1	M37753	Citrus sinensis	trichocarpa		
CAA03908.1	AJ0000981	Vitis vinifera	CAA11496.1	AJ223621	Populus balsamifera subsp.
CBH91554.1	AJ277900	Glycine max	trichocarpa		
RAH03501.1	U41323	Nicotiana plumbaginifolia	CAA80931.1	AF022775	Nicotiana tabacum
RAH34078.1	M63634	Nicotiana plumbaginifolia	CAA33943.1	Z33878	Petroselinum crispum
CAA30261.1	X07280	Nicotiana plumbaginifolia	CAA30894.1	M69184	Petroselinum crispum
			AAH30894.1	Z54183	Petroselinum crispum
			CAA90969.1	Z54233	Vitis vinifera
			AAH59389.1	U13151	Zinnia elegans
			CBH05369.1	Z82982	Nicotiana tabacum

AA060651.1	U27116	Populus tremuloides	BR0454510.1	AB041504	Populus nigra
AA080395.1	AF053553	Mesembryanthemum crystallinum	RA027895.1	AF023165	Zea mays
CA01200.1	AJ224896	Populus balsamifera subsp.	RAF91337.1	AF0249318	Glycine max
trichocarpa			RAF91336.1	AF0249317	Glycine max
CA012199.1	AJ224895	Populus balsamifera subsp.	CAB51834.1	00069	Oryza sativa
trichocarpa			RA009771.1	U67422	Zea mays
CA011495.1	AJ223620	Populus balsamifera subsp.	RA009771.1	U67422	Lycopersicon esculentum
trichocarpa			RA021805.1	U28007	Brassica napus
RA050443.1	AF168780	Eucalyptus globulus	RA021805.1	AY028699	Brassica napus
RA044689.1	AF240466	Populus tomentosa	RA030309.1	AC073405	Oryza sativa
CA049913.1	U38612	Nicotiana tabacum	RAF34428.1	AF172282	Oryza sativa
CA072911.1	Y12228	Eucalyptus gunnii	RAF25966.1	AF302082	Nicotiana tabacum
CA079916.1	U62736	Nicotiana tabacum	RAF66615.1	AF142596	Nicotiana tabacum
CA078733.1	AB023482	Oryza sativa	CAB51836.1	AJ243961	Oryza sativa
CA091228.1	Z56282	Nicotiana tabacum	CAB57592.1	Z73295	Catharanthus roseus
CA091914.1	U62734	Nicotiana tabacum	RA084787.1	AF000559	Oryza sativa
CA026191.1	AF046122	Eucalyptus globulus	RA083373.1	AF000391	Oryza sativa
CA039915.1	U62735	Nicotiana tabacum	RAF76313.1	AF220603	Lycopersicon esculentum
RA020506.1	AF036095	Pinus taeda	CAB79355.1	U59316	Lycopersicon esculentum
AK016714.1	AF327458	Populus alba x Populus	RA033915.1	Z78221	Brassica oleracea
glandulosa			RA035893.1	AF002071	Oryza sativa
CAB45150.1	AJ242981	Zea mays	CA036318.1	AF053127	Malus x domestica
CAB45149.1	AJ242980	Zea mays			
AB061680.1	L22203	Stellaria longipes	SEQ ID NO. 1742		
RA088234.1	AB035144	Citrus natsudaoidai	RA027157.1	AF349449	Brassica juncea
RA081776.1	AF000364	Oryza sativa	RA028177.1	AF109694	Brassica juncea
RA081774.1	AF000364	Oryza sativa	RA070837.1	AF019907	Vitis vinifera
RA081777.1	AF000364	Oryza sativa	CAB53925.1	X76293	Nicotiana tabacum
CA010217.1	AJ130841	Populus balsamifera subsp.	RA026175.1	AF105199	Glycine max
trichocarpa			AAA33962.1	L11632	Glycine max
RA050441.1	AF168778	Eucalyptus globulus	CAB42921.1	X60373	Pisum sativum
RA050442.1	AF168779	Eucalyptus globulus	CAB42921.1	X90996	Pisum sativum
RA015067.1	AF060180	Nicotiana tabacum	CAB54043.1	X76533	Nicotiana tabacum
			CAB53993.1	X76455	Nicotiana tabacum
			CAB66835.1	AJ006055	Zea mays
			CAB66835.1	X98274	Pisum sativum
		Oryza sativa	RA036283.1	D85751	Oryza sativa
		Lophopyrum elongatum	RA07108.1	D37870	Oryza sativa
		Lophopyrum elongatum	RA07108.1	D37870	Spinacia oleracea
		Brassica rapa	RA07108.1	D37870	Spinacia oleracea
		Zea mays	RA07108.1	D37870	Brassica rapa subsp. pkinensis
		Populus nigra	RA07108.1	D37870	Brassica rapa
			RA049980.2	AF008441	

CAC13956.1	AJ7400816	Mesembryanthemum crystallinum	BA220074.1	AB002147	Nicotiana excelsior
CAR66333.1	AJ272690	Betula pendula	BA81820.1	AB029325	Oryza sativa
KA266053.1	AJ074940	Glycine max	BA86780.1	U60145	Beta vulgaris
AA050526.1	S70187	Glycine max	CA846230.1	U73467	Mesembryanthemum crystallinum
AA053185.1	AF181096	Vigna unguiculata	BA846230.1	U73467	Solanum tuberosum
AA028178.1	AF109695	Brassica juncea	BA24016.1	U18311	Oryza sativa
BA05408.1	D26392	Cucumis sativus	CA04652.1	AB009665	Craterostigma plantagineum
AA041654.1	L41345	Lycopersicon esculentum	SEQ ID NO. 1746	AB001292	
SEQ ID NO. 1743			CAB76364.1	AJ133371	Cucumis sativus
CAR82945.1	Z30243	Secale cereale	SEQ ID NO. 1747		
AA033748.1	M99431	Ipomoea nil	BA21153.1	AF002899	Oryza sativa
BA090487.1	AB037681	Oryza sativa	AA049181.1	U39289	Brassica napus
CA077978.1	Z11920	Oryza sativa	BA049228.1	AF001633	Oryza sativa
AA016785.1	L14594	Catharanthus roseus	AA049182.1	U39319	Brassica napus
AB01376.1	M96549	Lycopersicon esculentum	BA049236.1	AF001633	Oryza sativa
AA011549.1	U55859	Triticum aestivum	BA049219.1	AF001633	Oryza sativa
BA026482.2	S59780	Triticum aestivum	BA049224.1	AF001633	Oryza sativa
CA044877.1	X63195	Zea mays	BA049215.1	AF001633	Oryza sativa
AA0123259	Nicotiana tabacum		SEQ ID NO. 1749		
AA030456.1	Euphorbia esula		CAB65064.1	X57573	Antirrhinum majus
AA032131.1	Picea mariana		SEQ ID NO. 1750		
AA031550.1	Triticum aestivum		CA021872.1	AF078082	Phaseolus vulgaris
SEQ ID NO. 1744			CA073134.1	Y12531	Brassica oleracea
AA041796.1	Glycine max		BA093834.1	U82481	Zea mays
BA095630.1	Oryza sativa		CA023542.1	U20948	Ipomoea trifida
AA0474361.1	Zea mays		CA073133.1	Y12530	Brassica oleracea
BA011417.1	Oryza sativa		CA071145.1	X98520	Brassica oleracea
AA005983.1	Glycine max		AA02232.1	U00443	Brassica napus
AA0049708	Chloroplast Glycine max		CA074561.1	Y14285	Brassica oleracea
AA047360.1	Zea mays		CA041879.1	Y18260	Brassica oleracea
AA016972.1	Daucus carota		AA033000.1	M76647	Brassica oleracea
SEQ ID NO. 1745			BA092836.1	AB032473	Brassica oleracea
AA027971.1	Lotus japonicus		BA023676.1	AB000970	Brassica rapa
CA045652.1	Psidium sativum		CA074562.1	Y14286	Brassica oleracea
BA040257.1	Oryza sativa		AA033008.1	M57667	Brassica napus subsp. napus
AA0237751	Nicotiana tabacum		CAB89179.1	AJ245479	
AA061465.1	Triticum aestivum		CAB41378.1	Y18259	Brassica oleracea
BA040142.1	Pyrus communis				

AA06329.1	AF191305	Medicago sativa	BB32871.1	AB056063	Oryza sativa
BA12064.1	D3696	Nicotiana sylvestris	CA05019.1	X71900	Lycopersicon esculentum
AA01176.1	AF315811	Triticum aestivum			
CA050729.1	AO002894	Oryza sativa	SEQ ID NO. 1811		
AA071417.1	U01287	Pisum sativum			Rosa hybrid cultivar
BA022083.1	D28862	Nicotiana sylvestris			Rosa hybrid cultivar
					Rosa hybrid cultivar
					Rosa hybrid cultivar
					Limnanthes douglasii
SEQ ID NO. 1808					
AA000554.1	U54703	Phaseolus vulgaris	SEQ ID NO. 1812		
CA078515.1	Z14145	Pisum sativum	AA017077.1	AF199453	Sorghum bicolor
AA033203.1	U69633	Solanum tuberosum	AA01647.1	AF190634	Nicotiana tabacum
AA020259.1	AF043093	Hordeum vulgare	AA098390.1	AF287143	Brassica napus
AA01696.1	AF181458	Hordeum vulgare	AA093039.1	AB033758	Citrus unshiu
AA018202.1	U73211	Triticum aestivum	BA089009.1	AB027455	Petunia x hybrida
AA018201.1	U73210	Triticum aestivum	BA036421.1	AB013596	Perilla frutescens
AA0202689.1	AF044584	Lavatera thuringiaca	BA041018.1	AB047091	Vitis labrusca x Vitis vinifera
CA093666.1	A2289610	Pinus sylvestris	BA041018.1	AB047091	Scutellaria baicalensis
AA020252.1	AF043086	Hordeum vulgare	BA041026.1	AB047099	Vitis vinifera
AA01699.1	AF181461	Hordeum vulgare	BA041026.1	AB047099	Vitis vinifera
AA050291.1	AF172263	Prunus dulcis	BA041022.1	AB047093	Vitis vinifera
CA09421.1	AO010944	Helianthus annuus	BA041022.1	AB047093	Vitis vinifera
CA050713.1	AO02741	Helianthus annuus	BA041022.1	AB047093	Vitis vinifera
AA060172.1	AF236067	Elaeagnus guineensis	BA041022.1	AB047093	Vitis vinifera
AA019693.1	U11696	Sorghum bicolor	BA041022.1	AB047093	Vitis vinifera
AA071225.1	U11696	Glycine max	BA041022.1	AB047093	Vitis vinifera
AA050927.1	U63831	Sorghum bicolor	BA041022.1	AB047093	Vitis vinifera
CA063339.1	X92647	Helianthus annuus	BA041022.1	AB047093	Vitis vinifera
CA033364.1	X15290	Zea mays	BA041022.1	AB047093	Vitis vinifera
CA066970.1	X98326	Hordeum vulgare	BA041022.1	AB047093	Vitis vinifera
CA033363.1	X15289	Hordeum vulgare	BA041022.1	AB047093	Vitis vinifera
SEQ ID NO. 1810					
AA033701.1	L16977	Petunia x hybrida	BA041022.1	AB047093	Vitis vinifera
AA033709.1	L16977	Petunia x hybrida	BA041022.1	AB047093	Vitis vinifera
AA024195.1	AF020425	Nicotiana tabacum	BA041022.1	AB047093	Vitis vinifera
AA040608.1	U54774	Nicotiana tabacum	BA041022.1	AB047093	Vitis vinifera
AA018620.1	AF352732	Nicotiana tabacum	BA041022.1	AB047093	Vitis vinifera
AA039483.1	AF020424	Nicotiana tabacum	BA041022.1	AB047093	Vitis vinifera
BA032870.1	AB056062	Oryza sativa	BA041022.1	AB047093	Vitis vinifera
BA032868.1	AB056060	Oryza sativa	BA041022.1	AB047093	Vitis vinifera
BA032869.1	AB056061	Oryza sativa	BA041022.1	AB047093	Vitis vinifera

CRB56231.1	Y18871	Dortheanthus bellidifolius	AA19183.1	U41189	Chlamydomonas reinhardtii
MD26203.1	AF11767	Malus x domestica	SEQ ID NO. 1814		
BR189008.1	AB027454	Petunia x hybrida	RAKL4395.1	AF339732	Dianthus caryophyllus
BA119659.1	AB002818	Perilla frutescens	RA020581.1	AB042268	Zea mays
BR112737.1	D85186	Gentiana triflora	RA020580.1	AB042267	Zea mays
AAH86473.1	AF102837	Ipomoea purpurea	RA020579.1	AB042261	Zea mays
CR13729.1	X15694	Hordeum vulgare	RA051113.1	AB031012	Zea mays
			BR1892873.1	AB024291	Zea mays
			RA017300.1	AB042260	Zea mays
			BR175253.1	AB004882	Zea mays
			RA051112.1	AB031011	Zea mays
			RA020582.1	AB042269	Zea mays
			RA041137.1	AB060130	Zea mays
SEQ ID NO. 1813			SEQ ID NO. 1815		
AA065822.1	U55838	Populus tremula x Populus	RA062808.1	U71108	Nicotiana tabacum
tremuloides			RA062807.1	U71107	Nicotiana tabacum
RA049785.1	U55837	Populus tremula x Populus	RA034989.1	AF042333	Oryza sativa
tremuloides			RA034951.1	U91312	Nicotiana tabacum
RA029050.1	AF132855	Gossypium hirsutum	RA040057.1	U43683	Glycine max
AA066933.1	U19738	Flaveria linearis	RA070886.1	U79669	Zea mays
RA029049.1	AF132854	Gossypium hirsutum	RA034988.1	AF042332	Oryza sativa subsp. japonica
AA066942.1	U08402	Flaveria brownii	RA04265.1	AF045570	Zea mays
AA034027.1	J05403	Spinacia oleracea	RA035787.1	AF053766	Nicotiana tabacum
AA034057.1	L19255	Nicotiana tabacum	RA037769.1	U60754	Triticum aestivum
AA066932.1	U19135	Nicotiana tabacum	RA062812.1	U91313	Ricinus communis
AA066992.1	U19737	Flaveria pringlei	RA01950.1	AF237633	Spinacia oleracea
AA066939.1	U08398	Flaveria bidentis	RA059894.1	AF328858	Lycopersicon esculentum
AA034026.1	M27295	Spinacia oleracea	SEQ ID NO. 1817		
AA033652.1	M63627	Pisum sativum	RA026960.1	U63726	Glycine max
AA027876.2	U19740	Vigna radiata	SEQ ID NO. 1818		
AA066994.1	U19740	Flaveria linearis	RA036699.1	AF075581	Mesembryanthemum crystallinum
CR143571.1	X93312	Glycine max	RA036697.1	AF075579	Mesembryanthemum crystallinum
CR143712.1	X93312	Medicago sativa	RA017804.1	AF092431	Lotus japonicus
AA066944.1	U08401	Zea mays	RA010358.1	AJ277086	Nicotiana tabacum
RA031953.1	AB016283	Oryza sativa	CR090634.1	AJ277744	Fagus sylvatica
RA056038.1	AF182806	Oryza sativa	CA010359.1	AJ277087	Nicotiana tabacum
AA066945.1	U08404	Oryza sativa			
AA066945.1	U08403	Oryza sativa			
AA069027.1	U19739	Zea mays			
AA069028.1	U19741	Urochloa panicoides			
RA059793.1	AB009887	Nicotiana tabacum			
RA078507.1	AF195204	Pyrus pyrifolia			
RA033484.1	U49976	Coccomyxa sp. PA			
RA049888.1	U90805	Chlamydomonas reinhardtii			
RA049887.1	U90804	Chlamydomonas reinhardtii			
RA019184.1	U41190	Chlamydomonas reinhardtii			

[illegible]

RA022495.3	AF134116	Hyacinthus orientalis	SEQ ID NO. 1873	SEQ ID NO. 1875	Petunia x hybrida
RA076998.1	AF274033	Atriplex hortensis	RA021921.1	AB006599	
RA021249.1	AF335236	Petunia x hybrida	SEQ ID NO. 1876		
RA076381.1	AF068723	Nicotiana tabacum	CA041987.1	AJ133453	Nicotiana tabacum
RA021254.1	AF335241	Petunia x hybrida	CA075603.1	Y15383	Pisum sativum
RA021338.1	AF129675	Capsicum annuum	BA081220.1	AF251346	Tagetes erecta
RA025922.1	U78947	Malus x domestica	CA089286.1	AJ271748	Nicotiana tabacum
CA049419.1	AJ001681	Malus x domestica	RA023770.1	AF205858	Nicotiana tabacum
CA064741.1	X95467	Antirrhinum majus	CA054558.1	AJ249138	Physcomitrella patens
RA051422.1	U78949	Malus x domestica	RA023771.1	AF205859	Gentiana lutea
CA04323.1	AJ000761	Malus x domestica	CA076387.1	AJ249140	Physcomitrella patens
CA078284.1	AF029977	Eucalyptus grandis	CA076386.1	AJ249139	Physcomitrella patens
CA04320.1	AJ001682	Malus x domestica	CA04845.2	AJ001586	Physcomitrella patens
RA021247.1	AF335234	Petunia x hybrida	CA089288.1	AJ271750	Nicotiana tabacum
RA021248.1	AF335235	Petunia x hybrida	BA096782.1	AB042101	Lilium longiflorum
RA051423.1	U78950	Malus x domestica	RA087239.1	AF275720	Platid Nectotetris nidus
CA04322.1	AJ000760	Malus x domestica	RA019407.1	AF203636	Chlamydomonas reinhardtii
RA077578.1	AF072534	Capsicum annuum	SEQ ID NO. 1877		
CA048859.1	X95107	Aranda deborah	RA001147.1	AF283816	Pinus taeda
RA049817.1	U78892	Oryza sativa	CA003161.1	AJ002057	Beta vulgaris
CA049816.1	U78891	Oryza sativa	RA071419.1	U74630	Ricinus communis
CA097355.1	AJ249147	Hordeum vulgare	RA071420.1	U74631	Ricinus communis
RA039034.1	AF068722	Nicotiana glauca	CA095999.1	Z71395	Nicotiana glauca
CA064742.1	X95468	Antirrhinum majus	RA017490.1	AF052040	Barberis stolonifera
CA064743.1	X95469	Antirrhinum majus	RA022207.1	AF134733	Prunus armeniaca
CA069916.1	Y08626	Sinapis alba	CA061939.1	X89813	Zea mays
CA095648.1	AJ252070	Betula pendula	RA032948.1	L27348	Hordeum vulgare
RA013262.1	AF198176	Dendrobium grex Madame Thong-In	RA032949.1	L27349	Hordeum vulgare
CA011258.1	AJ223318	Pisum sativum	RA011470.1	AF190454	Zea mays
RA050187.1	U49734	Sorghum bicolor	CA054526.1	AJ000765	Chlamydomonas reinhardtii
RA066187.1	L34271	Oryza sativa	RA070919.1	AF019376	Brassica napus
RA035652.1	AF204063	Oryza sativa	BA055118.1	AB018243	Solanum melongena
RA078282.1	AF029975	Eucalyptus grandis	CA054975.1	X78057	Zea mays
RA038370.1	AF141966	Oryza sativa	CA057914.1	X82578	Parthenium argentatum
RA019822.1	AB0003324	Oryza sativa	CA055502.1	AF325720	Pennisetum cillare
CA04325.1	AJ000763	Malus x domestica	BA077025.1	AB026251	Lithospermum erythrorhizon
RA020916.1	AF107588	Dendrobium grex Madame Thong-In	SEQ ID NO. 1878		
RA042500.1	U78782	Oryza sativa			
RA013260.1	AF196174	Dendrobium grex Madame Thong-In			

AAE67050.1	AF190301	Secale cereale	AAK28604.1	AF310959	Linum usitatissimum
AAE67051.1	AF190302	Secale cereale	AAK09951.1	AF175388	Glycine max
CAA76388.1	Z13988	Petunia x hybrida	CAC35337.1	AJ310162	Linum usitatissimum
AAE72218.1	Y11415	Oryza sativa	CAC35330.1	AJ310155	Linum usitatissimum
BAE81731.1	AB029160	Glycine max	CAA08797.1	AJ009719	Solanum tuberosum
BAE81730.1	AB029159	Glycine max	CAC35326.1	AJ310151	Linum usitatissimum
CAA72217.1	Y11414	Oryza sativa	CAC35325.1	AJ310150	Linum usitatissimum
BAE81736.1	AB029165	Glycine max	CAC35336.1	AJ310161	Linum usitatissimum
AAE41101.1	U72762	Nicotiana tabacum	CAC35328.1	AJ310153	Linum usitatissimum
BAE86223.1	AB028651	Nicotiana tabacum	CAC35332.1	AJ310157	Linum usitatissimum
RAE23340.1	D88620	Oryza sativa	CAC35339.1	AJ310164	Linum usitatissimum
BAE81733.2	AB029162	Glycine max	AAE25966.1	AF093639	Linum usitatissimum
BAE86222.1	AB028650	Nicotiana tabacum	CAC35338.1	AJ310163	Linum usitatissimum
CBK43399.1	A7006292	Antirrhinum majus	AAE43546.1	AF211528	Nicotiana tabacum
BAE81732.1	AB029161	Glycine max	CAC35321.1	AJ310150	Linum usitatissimum
BAE86525.1	AF198498	Nicotiana tabacum	CAC35333.1	AJ310158	Linum usitatissimum
CAE50226.1	X70881	Hordeum vulgare	CAC35334.1	AJ310159	Linum usitatissimum
CAE50223.1	X70878	Hordeum vulgare	CAC35329.1	AJ310154	Linum usitatissimum
CAA78387.1	Z13997	Petunia x hybrida	AAE25969.1	AF093642	Linum usitatissimum
CAA67000.1	X98355	Oryza sativa	AAE25974.1	AF093647	Linum usitatissimum
AAK19616.1	AF336283	Gossypium hirsutum	CAC35327.1	AJ310152	Linum usitatissimum
AAE28526.1	AF198499	Nicotiana tabacum	AAE25975.1	AF093648	Linum usitatissimum
CAA78386.1	Z13996	Petunia x hybrida	AAE01052.1	AF175395	Glycine max
CAA66952.1	X98308	Lycopersicon esculentum	CAC35331.1	AJ310156	Linum usitatissimum
BAE23341.1	D88621	Oryza sativa	CAC35323.1	AJ310150	Linum usitatissimum
CAA50221.1	X70876	Hordeum vulgare	AAE25968.1	AF093641	Linum usitatissimum
AAK19611.1	AF336278	Gossypium hirsutum	AAE01022.1	U27081	Linum usitatissimum
CAA61021.1	X87690	Hordeum vulgare	AAE25976.1	AF093649	Linum usitatissimum
AAE28663.1	AY008692	Hordeum vulgare	AAE01021.1	U27081	Linum usitatissimum
	1915		AAE25970.1	AF093643	Linum usitatissimum
AAE0763.1	U15605	Nicotiana glutinosa	AAE25967.1	AF093640	Linum usitatissimum
AAE28609.1	AF310962	Linum usitatissimum	AAE47618.1	U73916	Linum usitatissimum
AAE28810.1	AF310964	Linum usitatissimum	AAE25971.1	AF093644	Linum usitatissimum
AAE28812.1	AF310968	Linum usitatissimum	AAE25965.1	AF093638	Linum usitatissimum
AAE28808.1	AF310961	Linum usitatissimum	AAE25973.1	AF093646	Linum usitatissimum
AAE28805.1	AF310960	Linum usitatissimum	AAE25972.1	AF093645	Linum usitatissimum
CAA08796.1	AJ009720	Solanum tuberosum	AAE01051.1	AF175394	Glycine max
AAE28811.1	AF310966	Linum usitatissimum	AAE09954.1	AF175399	Glycine max
AAE28806.1	AF310960	Linum usitatissimum	AAE09953.1	AF175398	Glycine max
AAE28803.1	AF310958	Linum usitatissimum			

SEQ ID NO. 1518

AD03741.1	AF111812	Brassica napus	CAC10358.1	AJ277086	Nicotiana tabacum
CAC5923.1	X79378	Sorghum bicolor	AC36698.1	AF075580	Mesembryanthemum crystalli
AB38512.1	U81047	Pisum sativum	CAC10359.1	AJ277087	Nicotiana tabacum
AB38511.1	U81046	Pisum sativum	AG49355.1	AJ213455	Zea mays
AB38642.1	U76191	Pisum sativum	CAC09575.1	AJ298987	Fagus sylvatica
AB38641.1	U76190	Pisum sativum	CAB90634.1	AJ277744	Fagus sylvatica
CAC62028.1	X90378	Pisum sativum	AC35951.1	AF079355	Mesembryanthemum crystalli
CAC34356.1	X16280	Oryza sativa	AD111430.1	AF097667	Mesembryanthemum crystallinum
CAA47899.1	X67666	Pisum sativum	CAC36700.1	AF075582	Mesembryanthemum crystallinum
AF62805.1	AF282624	Helianthus annuus	CAC09576.1	AJ298988	Fagus sylvatica
CAA48609.1	X68649	Pisum sativum	CAC26828.1	AF075603	Oryza sativa
AB16054.1	AF061019	Coleochaete scutata	AB03832.1	U81960	Zea mays
AB38514.1	U81049	Pisum sativum	AC36699.1	AF075581	Mesembryanthemum crystallinum
AB18644.1	U76193	Pisum sativum	SEQ ID NO. 1927		
AAC64127.1	AF091809	Anemia phyllitidis	AG02411.1	AF284038	Cucurbita maxima
CAC39279.1	X55750	Solanum tuberosum	CRA72274.1	Y11486	Triticum aestivum
AD02328.1	AF044573	Brassica oleracea	CAB52709.1	AJ245878	Triticum aestivum
CAC23728.1	V00450	Glycine max	CAB52710.1	AJ245879	Triticum aestivum
AC16055.1	AF061020	Mesostigma viride	CAB56232.1	X97636	Hordium vulgare
AC64128.1	AF091810	Anemia phyllitidis	CRA72273.1	Y11485	Triticum aestivum
AC05272.1	AF049106	Glycine max	CAB64599.1	X95277	Hordium vulgare
AF87302.1	AF281323	Magnolia denudata	CAC90071.1	Z49850	Triticum aestivum
BA09450.1	D50839	Chlamydomonas reinhardtii	BA088536.1	AF000969	Oryza sativa
BA09449.1	D50838	Chlamydomonas reinhardtii	SEQ ID NO. 1928		
BA09449.1	D50838	Volvox carter	AC35846.1	AF083333	Medicago sativa
AAA33424.1	M33963	Zea mays	AAA74882.1	L36823	Stylosanthes humilis
AA16053.1	AF061018	Scherffelia dubia	AAK28509.1	AF320110	Fragaria x ananassa
CAC33873.1	X15864	Oryza sativa	AD10327.1	U63534	Fragaria x ananassa
CAC33871.1	X15862	Glycine max	AB386503.1	U79770	Mesembryanthemum crystallinum
AAA33940.1	J01297	Anemia phyllitidis	AC15467.1	U24561	Apium graveolens
AC64126.1	AF091808	Selaginella apoda	CAC16854.1	AF067082	Apium graveolens
AD48335.1	AF090969	Cosmarium botrytis	AAA74883.1	L36456	Stylosanthes humilis
AD48336.1	AF090970	Solanum tuberosum	CRA6072.1	Z37991	Pinus taeda
CAC39276.1	X55746		CRA51226.1	X72675	Picea abies
SEQ ID NO. 1925			CAC05097.1	AF001926	Picea abies
CAC72341.1	Y111607	Medicago sativa	CAC05096.1	AF001925	Picea abies
AD17804.1	AF092431	Lotus japonicus	AB38774.1	U62394	Pinus radiata
AD17803.1	AF092432	Lotus japonicus	CAC05095.1	AF001924	Picea abies
CAB90633.1	AJ277743	Fagus sylvatica	CRA86073.1	Z37992	Pinus taeda
CAC36697.1	AF075579	Mesembryanthemum crystallinum			

AA31166.1	AF060491	Pinus radiata	RA82394.1	AF000367	Oryza sativa
AC07423.1	AF295837	Populus balsamifera subsp.	BA94510.1	AB041504	Populus nigra
trichocarpa			BA978764.1	AB023482	Oryza sativa
AA73440.1	AF217957	Populus tremuloides	AA43496.1	AF131222	Lophopyrum elongatum
AA79622.1	Z19568	Populus deltoides	AAK11674.1	AF339747	Lophopyrum elongatum
AA44216.1	X62343	Nicotiana tabacum	AA03090.1	AC073405	Oryza sativa
BA03099.1	D13991	Aralia cordata	AA09771.1	U67422	Zea mays
AA61553.1	AF294793	Eucalyptus saligna	AA91323.1	AF244889	Glycine max
AA07087.1	AF038561	Eucalyptus globulus	AA91324.1	AF244890	Glycine max
AA44217.1	X62344	Nicotiana tabacum	AA91322.1	AF244888	Glycine max
AA46585.1	X65631	Nicotiana glauca	AA92566.1	AF302082	Nicotiana tabacum
AA72100.1	AF146691	Lycopersicon esculentum	AA61708.1	U93048	Daucus carota
AA53211.1	Y137480	Eucalyptus gunnii	CA20842.1	AJ250467	Pinus sylvestris
CA74070.1	Y13733	Zea mays	AA66616.1	AF142596	Nicotiana tabacum
CA79625.1	Z19573	Medicago sativa	AA59906.1	AF197947	Glycine max
CA06687.1	AJ005702	Medicago sativa	CA51834.1	000669	Oryza sativa
AA35845.1	AF083332	Seccharum officinarum	CA97692.1	Z73295	Catharanthus roseus
CA13177.1	AJ231135	Lolium perenne	AA36318.1	AF053127	Malus x domestica
AA97098.1	AF010290	Zinnia elegans	BA94529.2	AF001800	Oryza sativa
BA119487.1	D86590	Eucalyptus botryoides	BA94516.1	AF001800	Oryza sativa
BA04046.1	D16624	Brassica rapa	SEQ ID NO. 1936		
AA723416.1	AF207559	Brassica oleracea	BA978764.1	AB023482	Oryza sativa
AA723415.1	AF207558	Brassica napus	AA43496.1	AF131222	Lophopyrum elongatum
AA723414.1	AF207557	Brassica napus	AAK11674.1	AF339747	Lophopyrum elongatum
AA723413.1	AF207556	Brassica napus	AA03090.1	AF007545	Brassica napus
AA18000.1	AF109157	Eucalyptus globulus	BA94509.1	AB041503	Populus nigra
AA723409.1	AF207552	Brassica napus	BA94510.1	AB041504	Populus nigra
AA723411.1	AF207554	Brassica oleracea	AAK21965.1	AF028699	Brassica napus
			AA91337.1	AF249318	Glycine max
SEQ ID NO. 1929		Solanum tuberosum	AA03090.1	AC073405	Oryza sativa
CA63223.1	X92491		AA61805.1	U28007	Lycopersicon esculentum
			AA91336.1	AF249317	Glycine max
SEQ ID NO. 1935		Zea mays	CB51834.1	000669	Oryza sativa
AA723416.1	AF023164	Zea mays	AA27894.1	AF023164	Zea mays
AA723415.1	AF023165	Brassica napus	AA62596.1	AF302082	Nicotiana tabacum
AA61628.1	AY007545	Brassica napus	AA63377.1	AF290411	Oryza meyeriana
AA21965.1	AF028699	Brassica napus	AA627895.1	AF023165	Zea mays
AA91336.1	AF249317	Glycine max	AAK17421.1	U59316	Lycopersicon esculentum
BA94509.1	AB041503	Populus nigra	AAK11566.1	AF318490	Lycopersicon hirsutum
AA61805.1	U28007	Lycopersicon esculentum	AA76313.1	AF220603	Lycopersicon esculentum
AA91337.1	AF249318	Glycine max			

SEQ ID NO. 1942	AAA34138.1	M96324	Lycopersicon esculentum
ACG1839.1	AB85891.1	U82966	Oryza sativa
AF025430	AD11617.1	AF050495	Lycopersicon esculentum
AF005655	AG28435.1	AF195028	Glycine max
AF005655	AG28436.1	AF195029	Glycine max
AF049347	CA868234.1	X99972	Brassica oleracea
SEQ ID NO. 1943	AD31896.1	AF15478	Mesembryanthemum crystallinum
SEQ ID NO. 1943	AB60276.1	U09989	Zea mays
CAA72093.1	CB59824.1	AJ271439	Prunus persica
SEQ ID NO. 1947	AD46187.1	AF156683	Nicotiana plumbaginifolia
CAC28528.1	BA01058.1	D10207	Oryza sativa
SEQ ID NO. 1950	AB49042.1	U54690	Dunaliella acidophila
AF082030	AA34173.1	M60166	Lycopersicon esculentum
SEQ ID NO. 1950	CA852107.1	X73901	Dunaliella bioculata
AC34855.1	AB35314.2	S79323	Vicia faba
SEQ ID NO. 1951	BA06629.1	D31843	Oryza sativa
AC05149.1	AA34094.1	M80489	Nicotiana plumbaginifolia
AA63279.1	BA08134.1	D45189	Zostera marina
CA86369.1	CB85494.1	AJ132891	Medicago truncatula
AA63278.1	CB85495.1	AJ132892	Medicago truncatula
CA893121.1	CA84202.2	AF029256	Kosteletzkya virginica
CA81610.1	CA84275.1	X66737	Nicotiana plumbaginifolia
CA81040.1	CA854045.1	X76535	Solanum tuberosum
AJ012714	AD46186.1	AF156679	Nicotiana plumbaginifolia
CA81613.1	CB879823.1	U72148	Lycopersicon esculentum
CAA10520.1	AA84198.1	U84891	Prunus persica
AAA86533.1	CA829436.1	AJ310524	Mesembryanthemum crystallinum
AAA50175.1	BA37150.1	AB022442	Vicia faba
CA85390.1	CA859800.1	X85805	Vicia faba
AB35984.1	CA859799.1	X85804	Phaseolus vulgaris
AF80379.2	CA829435.1	AJ310523	Vicia faba
AF533386	AD46188.1	AF156691	Nicotiana plumbaginifolia
AB850734.2	AA34099.1	M80491	Nicotiana plumbaginifolia
AD10496.1	CA834052.1	M27888	Nicotiana plumbaginifolia
AB37749.1	CA854046.1	X76536	Solanum tuberosum
SEQ ID NO. 1957	AA34098.1	M80490	Nicotiana plumbaginifolia
BA90510.2	AD55399.1	AF179442	Lycopersicon esculentum
AF73985.1	AB98344.1	AF275745	Lycopersicon esculentum
CA863790.1	AG01028.1	AF269025	Cucumis sativus
AD11618.1	AAK31799.1	AY029190	Lilium longiflorum

AA01340.1	U30965	Vicia faba	CAA46234.1	X65118	Nicotiana plumbaginifolia
AAK32119.1	AF308817	Hordeum vulgare	AAK33486.1	M74566	Zea mays
AAK32118.1	AF308816	Hordeum vulgare	AAK90405.1	U34742	Spinacia oleracea
AAK20600.1	U08984	Zea mays	CAW7551.1	X82030	Phaseolus vulgaris
SEQ ID NO. 1959			CAH11893.1	A224324	Hordeum vulgare
CBK43505.1	AJ239051	Cicer arietinum	CAA41023.1	X37955	Spinacia oleracea
BR474465.1	AB022732	Glycyrrhiza echnata	AAK33039.1	L15080	Mesembryanthemum crystallinum
BR493634.1	AB025016	Lotus japonicus	CAC01238.1	U292768	Nicotiana plumbaginifolia
BR42442.1	AB013379	Glycyrrhiza echnata	CAK49850.1	U90212	Nicotiana tabacum
CAA04117.1	AJ000478	Helianthus tuberosus	CAC01237.1	A292767	Nicotiana plumbaginifolia
CBK41490.1	AJ238439	Cicer arietinum	CAK81127.1	Z26042	Anemia phyllifidis
CAA04116.1	AJ000477	Helianthus tuberosus	AAF66823.1	AF190655	Nicotiana tabacum
CAA04115.1	AJ012581	Cicer arietinum	AAK38974.1	U81318	Triticum aestivum
ADG56282.1	AF155332	Petunia x hybrida	CAA05729.1	AJ002894	Oryza sativa
ADG05208.1	AF175278	Pisum sativum	BAK05170.1	D26182	Nicotiana sylvestris
BR412159.1	D83968	Glycine max	AAF66825.1	AF190657	Nicotiana tabacum
CAK65500.1	X95784	Nicotiana tabacum	AAK30205.1	AF349964	Daucus carota
CAK49198.2	U29333	Pisum sativum	AAF63202.1	AF240679	Cucumis sativus
AGK44132.1	AF218296	Pisum sativum	BAK71417.1	U81287	Pisum sativum
CAK64635.1	X95342	Nicotiana tabacum	BAK22083.1	D28862	Nicotiana sylvestris
AAK39494.1	AF014802	Eschscholzia Californica	CAK375429.1	AJ272011	Nicotiana plumbaginifolia
ABK94390.1	AF022461	Glycine max	BAK12064.1	D83696	Nicotiana sylvestris
AAK2913.1	M32865	Persia americana	BAK15104.1	U32310	Triticum aestivum
BR484072.1	AB028132	Torenia hybrida	BAK03762.1	D16205	Nicotiana sylvestris
BR413076.1	D66351	Glycine max	CAK80558.1	Z48624	Hordeum vulgare
BR484071.1	AB028151	Antirrhinum majus	AAK23220.1	AF310215	Sorghum bicolor
CAK50155.1	AF081575	Petunia x hybrida	SEQ ID NO. 1961		
CAK50155.1	X70824	Solanum melongena	AAK27547.1	AF269128	Brassica nigra
CAK70575.1	Y09423	Nepeta racemosa	AAK27695.1	AF016010	Brassica napus
BR492894.1	AB006790	Petunia x hybrida	AAK27694.1	AF016009	Brassica napus
ABK4587.1	AF022458	Glycine max	AAK27696.1	AF016011	Brassica napus
SEQ ID NO. 1960			AAK27546.1	AF269126	Brassica nigra
BR401887.1	D11111	Nicotiana sylvestris	AAK24863.1	AF300700	Ipomoea nil
BR401886.1	D11110	Nicotiana tabacum	CAK99310.1	AF052585	Malus x domestica
BR411894.1	AJ224325	Hordeum vulgare	CAK99309.1	AF052584	Malus x domestica
BR422411.1	D36485	Triticum aestivum	CAK35496.1	AF052690	Raphanus sativus
CAK06469.1	XJ005286	Hordeum vulgare	AAK22518.1	AF001136	Pinus radiata
CAK66479.1	XJ97905	Vicia faba	BAK14948.1	AF230669	Brassica napus
CAA46233.1	X65117	Nicotiana plumbaginifolia	BAK14950.1	AF230671	Brassica oleracea
			BAK14947.1	AF230668	Brassica napus

RA091337.1	AF249318	Glycine max	BRAL1608.1	D88399	Oryza sativa
RA091336.1	AF249317	Glycine max	ARG60195.1	AC084763	Oryza sativa
AF66615.1	AF142596	Nicotiana tabacum	EAR19573.1	AB002109	Oryza sativa
CA097692.1	Z73295	Catharanthus roseus	RA06348.1	U29095	Triticum aestivum
LY001567.1	AF318491	Lycopersicon hirsutum	RA000240.1	U73939	Nicotiana tabacum
ABAB7421.1	U09316	Lycopersicon esculentum	RA06325.1	M94726	Triticum aestivum
AF220603	AF220603	Lycopersicon esculentum	CA081443.1	Z26846	Mesembryanthemum crystalli
RA027894.1	AF023164	Zea mays	RA086962.1	L38855	Glycine max
AF318490	Lycopersicon hirsutum	Zea mays	AF27340.1	AF186020	Vicia faba
AF023165	Zea mays	Zea mays	CA089202.1	Z49233	Chlamydomonas eugametos
AF220602	Lycopersicon pimpinellifolium	AF220602	CA06503.1	AFJ005373	Cratystigma plantagineum
AF676306.1	AF220602	Lycopersicon pimpinellifolium	SEQ ID NO. 1979		
ABAB7424.1	U59317	Lycopersicon pimpinellifolium	RA017339.1	AF108435	Papaver somniferum
AF220602	Lycopersicon pimpinellifolium	Lycopersicon pimpinellifolium	RA013736.1	AF108432	Papaver somniferum
CA084914.1	U02271	Lycopersicon pimpinellifolium	RA013738.1	AF108434	Papaver somniferum
ABAB7423.1	U59315	Lycopersicon pimpinellifolium	AF13737.1	AF108433	Papaver somniferum
RA025966.1	AF302082	Nicotiana tabacum	CA089261.1	X55730	Glycine max
AF34428.1	AF172282	Oryza sativa	CA057783.1	X82367	Medicago sativa
CA073134.1	Y12531	Brassica oleracea	AB01556.1	U13925	Medicago sativa subsp. sativa
RA033377.1	AF290411	Oryza meyeriana	CA057782.1	X82368	Medicago sativa
AB001551	AF290411	Oryza sativa	CA057784.1	X82366	Medicago sativa
SEQ ID NO. 1978			CA057782.1	X82366	Medicago sativa subsp. sativa
RA034675.1	AB011670	Triticum aestivum	AB01555.1	U13924	Medicago sativa subsp. sativa
BA03688.1	AB011967	Oryza sativa	BA012084.1	D83718	Glycyrrhiza echinata
AF22219.1	AF141378	Zea mays	BA013113.1	D86559	Glycyrrhiza glabra
BA03689.1	AB011968	Oryza sativa	BA013113.1	D86558	Glycyrrhiza glabra
Y12465	AF2465	Sorghum bicolor	RA022264.1	AF133841	Xerophyta viscosa
CA073067.1	Y12464	Sorghum bicolor	RA021751.1	L12042	Bromus inermis
AB062493.1	AF004947	Oryza sativa	CA040747.1	X57526	Hordeum vulgare
BA06628.1	AF002482	Oryza sativa	CA088322.1	Z48360	Hordeum vulgare
CA071142.1	Y10036	Cucumis sativus	RA0149138.1	U21747	Avena fatua
AD023582.1	AF128443	Glycine max	ARG58639.2	AF055910	Orbanchie ramosa
CA057998.1	Z82548	Hordeum vulgare	AB07617.1	U03687	Apium graveolens
BA005649.1	D26602	Nicotiana tabacum	CA088591.1	Z48672	Sesbania rostrata
AF2602479	AF062479	Oryza sativa	AF013741.1	AF108437	Papaver somniferum
CA099329.1	AF062479	Solanum tuberosum	AG031150.1	AF308853	Lotus corniculatus
CA065454.1	X59597	Oryza sativa	BA017641.1	AF024989	Cicer arietinum
AB050547.1	U55768	Hordeum vulgare	CA081151.1	AF308854	Lotus corniculatus
CA064554.1	X65604	Hordeum vulgare	RA013740.1	AF108436	Papaver somniferum
CA007813.1	AJ0007990	Hordeum vulgare	SEQ ID NO. 1980		
CA064556.1	X65606	Hordeum vulgare			
AD000239.1	U773938	Nicotiana tabacum			

CMB94692.1	AJ242742	Ipomoea batatas	CAN71492.1	Y10466	Spinacia oleracea
RA037430.1	AF149280	Phaseolus vulgaris	AF03027.1	AF244924	Spinacia oleracea
trichocarpa	X37351	Populus balsamifera subsp.	BA07389.1	AB024439	Scutellaria baicalensis
trichocarpa	D30653	Populus kitakamiensis	BA07388.1	AB024438	Scutellaria baicalensis
AAA34108.1	J02979	Nicotiana tabacum	BA02554.1	L37790	Stylosanthes humilis
RA011592.1	DI1396	Nicotiana tabacum	BA063026.1	AF244923	Spinacia oleracea
CRA66034.1	X37348	Populus balsamifera subsp.	SEQ ID NO. 1981		
trichocarpa	L07554	Linum usitatissimum	AD010204.1	AF030260	Vicia sativa
RA011853.1	D83225	Populus nigra	RA017470.1	AF123609	Triticum aestivum
CRA60597.1	Y11593	Lycopersicon esculentum	RA033645.1	AF092917	Vicia sativa
CMB67121.1	Y19023	Lycopersicon esculentum	CAB41592.1	AY029178	Brassica rapa subsp. pekinensis
RA011852.1	D83224	Populus nigra	CAB41474.1	AJ238402	Catharanthus roseus
CRA66035.1	X37349	Populus balsamifera subsp.	RA054588.1	AF022459	Glycine max
trichocarpa			RA054586.1	AF022457	Glycine max
RA037427.1	AF149277	Phaseolus vulgaris	RA032913.1	M32685	Persea americana
RA01077.1	DI1102	Populus kitakamiensis	CRA09260.1	Z49263	Pisum sativum
CRA66036.1	X37350	Populus balsamifera subsp.	BA012159.1	D83568	Glycine max
trichocarpa			BA030283.1	AB037244	Asparagus officinalis
trichocarpa			CRA070576.1	Y09424	Nepeta racemosa
RA037734.1	X30692	Medicago sativa	BA040324.1	AB037245	Asparagus officinalis
CRA62225.1	X30693	Glycine max	RA037433.1	AF150881	Lycopersicon esculentum x
RA037734.1	AF014502	Medicago sativa	Lycopersicon		
CRA62226.1	X30694	Medicago sativa	CMB56503.1	AJ238612	Catharanthus roseus
RA066234.1	D30652	Populus kitakamiensis	CRA070575.1	Y09423	Nepeta racemosa
RA07241.1	D38051	Populus kitakamiensis	RA054589.1	AF022460	Glycine max
RA041810.1	L36156	Medicago sativa	RA056282.1	AF155332	Petunia x hybrida
RA041811.1	L36157	Medicago sativa	RA014963.1	AF153332	Brassica napus
RA014144.1	D90116	Amoracia rusticana	RA014961.1	AF214007	Brassica napus
CRA9819.1	AF007211	Glycine max	RA014962.1	AF214008	Brassica napus
RA02840.1	DI3683	Populus kitakamiensis	CRA050648.1	X71657	Solanum melongena
RA014143.1	D90115	Amoracia rusticana	RA048987.1	U09610	Berberis stolonifera
RA033129.1	M91372	Cucumis sativus	CRA07423.1	X81829	Zea mays
RA008499.1	D49551	Oryza sativa	CRA72208.1	Y11404	Zea mays
RA034101.1	L02124	Nicotiana tabacum	RA013076.1	D85351	Glycine max
CRA76680.1	Y17192	Cucurbita pepo	CMB41490.1	AJ238439	Cicer arietinum
CRA40796.1	X57564	Amoracia rusticana	BA040322.1	AB036772	Triticum aestivum
RA033121.1	M92742	Cucumis sativus	RA010067.1	AJ012581	Cicer arietinum
RA02206.1	AB027752	Nicotiana tabacum	BA04916.1	AB028933	Cicer arietinum
RA03561.1	AF155124	Gossypium hirsutum	CA004117.1	AJ000478	Hellianthus tuberosus
RA061863.1	M37636	Arachis hypogaea	CRA041116.1	AJ000477	Hellianthus tuberosus

[illegible]

CAA37847.1	X53851	Daucus carota	SEQ ID NO. 2016	SEQ ID NO. 2017	Solanum tuberosum
AA494336.1	AF166277	Nicotiana tabacum	BAA77204.1	L02830	Nicotiana tabacum
BA330662.1	AB017273	Cuscuta japonica	AA43550.1	AF211529	Lotus japonicus
CAB36910.1	AJ000691	Quercus suber	AA43550.1	AJ251808	Pisum sativum
CAA08908.1	AF009880	Castanea sativa	BAA78746.1	AB023482	Olea europaea
AA433975.1	M11395	Glycine max			Olea europaea
CAA25578.1	X01104	Glycine max			Olea europaea
AA030893.1	M11318	Glycine max	AA433811.1	L02830	Brassica napus
CAA41547.1	X58711	Medicago sativa	AA43547.1	AF211529	Triticum aestivum
AB663310.1	U46544	Helianthus annuus	CAB63264.1	AJ251808	Triticum aestivum
CAB08441.1	Z95153	Helianthus annuus	AA492677.1	U13736	Triticum aestivum
CAA42222.1	X59701	Helianthus annuus	AA431152.1	AF078680	Triticum aestivum
CAA37848.1	X53852	Daucus carota	AA410245.1	AF030033	Triticum aestivum
AA433940.1	U63631	Fragaria x ananassa	AA431151.1	AF078679	Triticum aestivum
AA433672.1	M33899	Pisum sativum	AA49571.1	U10150	Triticum aestivum
AA663311.1	U46545	Helianthus annuus	AA43587.1	U49105	Triticum aestivum
AA433974.1	M11317	Glycine max	AA43586.1	U49104	Triticum aestivum
CAA63903.1	X94193	Pennisetum glaucum	AA49585.1	U49103	Triticum aestivum
AA461632.1	U08601	Papaver somniferum	AA49584.1	U48693	Triticum aestivum
CAB55634.2	AJ237596	Helianthus annuus	AA49580.1	U48689	Triticum aestivum
AA478392.1	U83669	Oryza sativa	AA49579.1	U48688	Triticum aestivum
CAA33910.1	M80939	Oryza sativa	AA49578.1	U48242	Triticum aestivum
BAA02160.1	D12635	Oryza sativa	AA485157.1	U20297	Solanum tuberosum
CAA43210.1	X60820	Oryza sativa	AA485156.1	U20296	Solanum tuberosum
CAA37864.1	X53870	Chenopodium rubrum	AA482351.1	U20295	Solanum tuberosum
AA433909.1	M80938	Oryza sativa	AA482351.1	U20294	Solanum tuberosum
AA478393.1	U83670	Oryza sativa	AA433900.1	L18914	Oryza sativa
AA433985.1	U81385	Oryza sativa	AA492681.1	U13882	Pisum sativum
AA430454.1	AF123257	Lycopersicon esculentum	CAA78288.1	Z12828	Oryza sativa
AA433671.1	M33900	Pisum sativum			
AA478394.1	U83671	Oryza sativa	SEQ ID NO. 2019		Nicotiana tabacum
CAA63901.1	X94191	Pennisetum glaucum	AA41003.1	Y09876	Zea mays
CAA63902.1	X94192	Pennisetum glaucum	AA43588.1	AF215823	Oryza sativa
AA430452.1	AF123255	Lycopersicon esculentum	AA473828.1	AF162665	Oryza sativa
AA446641.1	X65723	Zea mays	BA491952.1	AB044537	Oryza sativa
CAA39603.1	X65138	Lycopersicon esculentum	BA491952.1	AB044537	Oryza sativa
CAA63570.1	X92983	Pseudotsuga menziesii	BA491952.1	AB030939	Oryza sativa
AA430453.1	AF123256	Lycopersicon esculentum	BA491952.1	AB037421	Oryza sativa
AA435371.1	X92984	Pseudotsuga menziesii	BA491952.1	U99142	Spinacia oleracea
CAA31785.1	X13431	Triticum aestivum	AA434025.1	M31480	Beta vulgaris
CAA53286.1	X75616	Oryza sativa	CAA41377.1	X58463	Beta vulgaris
			CAA41376.1	X58462	

AA072097.1	AF021257	Hordeum vulgare	BAA33062.1	AB017273	Cuscuta japonica
AA072096.1	AF021256	Hordeum vulgare	AA03671.1	M33900	Pisum sativum
			AA02160.1	D12635	Oryza sativa
			CB08441.1	Z95153	Helianthus annuus
AA043181.1	M98466	Lycopersicon esculentum	CA042222.1	X59701	Helianthus annuus
AA039547.1	U63374	Lycopersicon esculentum	CA0408908.1	AJ009880	Castanea sativa
AA038497.1	U79772	Mercurialis annua	CA063901.1	X94191	Pennisetum glaucum
			AA078394.1	U83671	Oryza sativa
			CA046641.1	X65725	Zea mays
SEQ ID NO. 2034			AA009181.1	AF089842	Funaria hygrometrica
AA015628.1	AF021807	Corylus avellana	AA001560.1	AF007762	Agrostis stolonifera var.
AA041133.1	AF161179	Malus x domestica			palustris
AA01546.1	X58710	Medicago sativa			
AA01547.1	X58711	Medicago sativa			
AA033672.1	M33899	Pisum sativum	SEQ ID NO. 2036		
AA003893.1	M11318	Glycine max	CAA05276.1	AJ002236	Lycopersicon pimpinellifolium
AA063310.1	A46544	Helianthus annuus	AA078591.1	AF053993	Lycopersicon esculentum
AA030454.1	AF123257	Lycopersicon esculentum	AA078596.1	AF053998	Lycopersicon esculentum
AA030452.1	AF123255	Lycopersicon esculentum	CAA05279.1	AJ002237	Lycopersicon esculentum
AA063311.1	U46545	Helianthus annuus	AA078593.1	AF053995	Lycopersicon esculentum
AA030453.1	AF123256	Lycopersicon esculentum	AA065235.1	U15936	Lycopersicon pimpinellifolium
CA063570.1	X32983	Pseudotsuga menziesii	CAA05274.1	AJ002236	Lycopersicon pimpinellifolium
CA063903.1	X94193	Pennisetum glaucum	AA078592.1	AF053994	Lycopersicon esculentum
CA025578.1	X01104	Glycine max	AA078595.1	AF053996	Lycopersicon esculentum
AA039603.1	X56138	Lycopersicon esculentum	AA067776.1	AP002561	Oryza sativa
AA061632.1	U92984	Pseudotsuga menziesii	AA082125.1	AP002539	Oryza sativa
AA063571.1	X92984	Papaver somniferum	AA05268.1	AJ002235	Lycopersicon hirsutum
CA036910.1	AJ000691	Quercus suber	AA050430.1	AF166121	Hordeum vulgare
CA055634.2	AJ237596	Helianthus annuus	CA055409.1	AF117265	Oryza sativa
AA033910.1	M80939	Oryza sativa	AA049123.1	U37133	Oryza sativa
CA037848.1	X53852	Daucus carota	AA080225.1	U72723	Oryza longistaminata
AA033975.1	M11395	Chenopodium rubrum			
AA039856.1	U81385	Glycine max	SEQ ID NO. 2038		
AA039856.1	U81385	Oryza sativa	AA000708.1	U91857	Stylosanthes hamata
CA043210.1	M08020	Oryza sativa	BA097123.1	AB016265	Nicotiana sylvestris
CA037847.1	X53851	Daucus carota	BA003248.1	AB037183	Nicotiana sylvestris
CA063902.1	X94192	Pennisetum glaucum	BA076734.1	AB024575	Nicotiana tabacum
AA033974.1	M11317	Glycine max	BA097122.1	AB016264	Nicotiana sylvestris
AA079392.1	U33669	Oryza sativa	CA069900.1	AJ251250	Catharanthus roseus
AA039601.1	U63631	Fragaria x ananassa	CA069899.1	AJ251249	Catharanthus roseus
AA072109.1	AF022217	Brassica rapa	AA049740.1	U89256	Lycopersicon esculentum

452

AA049741.1	U89257	Lycopersicon esculentum	AAA341073.1	M60166	Lycopersicon esculentum
BA007321.1	D38123	Nicotiana tabacum	AAA34094.1	M80489	Nicotiana plumbaginifolia
AA030047.1	U89255	Lycopersicon esculentum	AAA34052.1	M27888	Nicotiana plumbaginifolia
AA029516.1	AF190770	Oryza sativa	CAC28221.1	M2786746	Sesbania rostrata
AA029516.1	U77655	Solanum tuberosum	AAA06043.1	X76535	Solanum tuberosum
BA097124.1	AF016266	Nicotiana sylvestris	AAA06029.1	D31843	Oryza sativa
AA026119.1	AF057373	Nicotiana tabacum	CAA64406.1	X94936	Phaseolus vulgaris
BA087068.1	AF035270	Matricaria chamomilla	AA098344.1	AF275745	Lycopersicon esculentum
AA038748.1	U81157	Nicotiana tabacum	AA055399.1	AF179442	Lycopersicon esculentum
AA045623.1	AF084185	Brassica napus	CAA54046.1	X76536	Solanum tuberosum
BA001129	BA001129	Oryza sativa	SEQ ID NO. 2046		Raphanus sativus
CAA43454.1	X61146	Nicotiana tabacum	AAA65941.1	U18557	Raphanus sativus
SEQ ID NO. 2043			CAA65983.1	X97318	Raphanus sativus
CRA04670.1	AJ001310	Solanum tuberosum	AAA65940.1	U18556	Raphanus sativus
SEQ ID NO. 2045			AA03224.1	U59459	Brassica napus
BA089544.1	AP001072	Oryza sativa	CAA65984.1	X97319	Raphanus sativus
BA088191.1	AP000836	Oryza sativa	SEQ ID NO. 2048		Oryza sativa
BA090510.2	AP001111	Oryza sativa	BA085400.1	AP000615	Hordeum vulgare
AA011618.1	AF050496	Lycopersicon esculentum	CAA606083.1	Z63834	Hordeum vulgare
AA034138.1	M96324	Lycopersicon esculentum	CRA74909.1	Y14573	Linum usitatissimum
AA011617.1	AF050495	Lycopersicon esculentum	CAA06487.1	AJ005341	
AA031896.1	AF050871	Mesembryanthemum crystallinum	SEQ ID NO. 2049		Brassica napus
AA028436.1	AF145478	Zea mays	AA063112.1	AF000306	Brassica napus
CRA63790.1	X93592	Glycine max	AA063111.1	AF000305	Brassica napus
AA028435.1	AF195028	Dunaliella bioculata	AA061638.1	U10275	Flaveria bidentis
AA068234.1	X95972	Glycine max	AA033342.2	M84135	Flaveria chioraefolia
AA058940.1	U82966	Brassica oleracea	AA087399.1	U10277	Flaveria bidentis
CA069824.1	AJ271439	Prunus persica	AA033343.1	M84136	Flaveria chioraefolia
AA060276.1	U09589	Zea mays	SEQ ID NO. 2050		Glycine max
BA011058.1	D10207	Oryza sativa	AA022970.1	AF124148	Medicago truncatula
CRA29435.1	AJ310523	Vicia faba	CAB50901.1	AJ738651	
AA020330.1	AF110268	Oryza sativa	SEQ ID NO. 2051		Brassica napus
AA034098.1	M80490	Nicotiana plumbaginifolia	AA046671.1	AF018174	Pisum sativum
AA084203.1	AF029257	Kosteletzkya virginica	AA049357.1	U35830	Pisum sativum
AA028224.1	AJ7286749	Sesbania rostrata	CAA45098.1	X63537	
AA046186.1	AF156691	Nicotiana plumbaginifolia			

[illegible]

CAA82993.1	Z30332	Spinacia oleracea	AF244679	Zea mays
CAA82994.1	Z30333	Mesembryanthemum crystallinum	CA005355.1	Oryza sativa
SEQ ID NO. 2094				
AAC49181.1	U39289	Brassica napus	BA04780.1	Oryza sativa
AAC49182.1	U39319	Brassica napus	BA04779.1	Oryza sativa
SEQ ID NO. 2095				
CAA55039.1	X78203	Hyoscyamus muticus	CAA7926.1	Cucumis sativus
AAB65163.1	AF002692	Solanum commersonii	BA1117.1	Cucubita sp.
BA001394.1	D10524	Nicotiana tabacum	CAA63598.1	Brassica napus
CAA96341.1	Z71749	Nicotiana glauca	CAA5078.1	Mangifera indica
AA33931.1	M84969	Silene vulgaris	CAA5006.1	Raphanus sativus
AA33930.1	M84968	Silene vulgaris	AA044539.1	Zea mays
AAF61392.1	AF133894	Persea americana	AF113522	
CRB38119.1	AJ010296	Zea mays	SEQ ID NO. 2101	
CRB38118.1	AJ010295	Zea mays	AAE67753.1	Brassica rapa subsp. pekinensis
AAG34811.1	AF243376	Glycine max	AAC49980.2	Brassica rapa
AAG34812.1	AF243377	Glycine max	CAA66924.1	Pisum sativum
AAG34814.1	AF243379	Glycine max	BA36283.1	Oryza sativa
CA009190.1	AJ010451	Alopecurus myosuroides	BA37092.1	Oryza sativa
CA009193.1	AJ010451	Alopecurus myosuroides	BA07108.1	Spinacia oleracea
CA009191.1	AJ010452	Alopecurus myosuroides	CA033956.1	Mesembryanthemum crystallinum
CA009192.1	AJ010453	Alopecurus myosuroides	CA066332.1	Betula pendula
AAD56395.1	AF184059	Triticum aestivum	CAA53925.1	Nicotiana tabacum
CA039487.1	X56012	Triticum aestivum	CA042921.1	Pisum sativum
CA068993.1	Y07721	Petunia x hybrida	AA027157.1	Brassica juncea
AA334470.1	M16901	Zea mays	AA028177.1	Brassica juncea
AA334469.1	M16902	Zea mays	CA062482.1	Pisum sativum
AA020595.1	U12679	Zea mays	AA026175.1	Glycine max
CA056047.1	X79515	Zea mays	BA070837.1	Vitis vinifera
CA066333.1	AJ279691	Betula pendula	AA033962.1	Glycine max
AA064007.1	AF062403	Oryza sativa	AA04043.1	Nicotiana tabacum
CA039480.1	X56004	Triticum aestivum	CA060835.1	Zea mays
AA034818.1	AF244680	Zea mays	CA033993.1	Nicotiana tabacum
AA034817.1	AF244677	Zea mays	BA030526.1	Glycine max
AA034816.1	AF244674	Zea mays	AA053185.1	Glycine max
AA034821.1	AF244678	Zea mays	AA060979.1	Vigna unguiculata
CA005354.1	AJ002380	Oryza sativa	BA050408.1	Pisum sativum
AA034816.1	AF244673	Zea mays	AA041654.1	Cucumis sativus
				Lycopodium obscurum

ABD28178.1	AF2109695	Brassica juncea	AF195217	Pyrus pyrifolia
BAF77214.1	D85764	Oryza sativa	BAF78516.1	Oryza sativa
SEQ ID NO. 2104			SEQ ID NO. 2111	
AG22606.1	AF238809	Lycopersicon esculentum	BAF78575.1	Oryza sativa
AA41742.1	U82559	Lycopersicon esculentum	BAF78572.1	Oryza sativa
AG22605.1	AF258808	Lycopersicon esculentum	BAF78573.1	Oryza sativa
AG22607.1	AF258810	Lycopersicon esculentum	BAF66601.1	Nicotiana tabacum
BAZ23226.1	D88451	Zea mays	CAE98831.1	Solanum tuberosum
AG22608.1	AF259793	Lycopersicon esculentum	CAE8755.1	Nicotiana tabacum
ABA1741.1	U82558	Lycopersicon esculentum	CAE6606.1	Nicotiana tabacum
SEQ ID NO. 2106			CAE6605.1	Nicotiana tabacum
AA474957.1	L31936	Brassica rapa	BAF78574.1	Oryza sativa
CAE9757.1	Z75521	Lycopersicon esculentum	BAF78576.1	Oryza sativa
AAE6718.1	U86018	Oryza sativa	SEQ ID NO. 2113	Lotus japonicus
BAF78511.1	AF195209	Pyrus pyrifolia	CAE98179.1	Oryza sativa
SEQ ID NO. 2107			BAE02904.1	
CAE59409.1	X85038	Spinacia oleracea	SEQ ID NO. 2114	Petunia x hybrida
AAU50464.1	AF170026	Chlamydomonas reinhardtii	BAE027455	Verbena x hybrida
SEQ ID NO. 2108			BAE36423.1	Perilla frutescens
CAE45701.1	X64349	Nicotiana tabacum	BAE36421.1	Citrus unshiu
BAE9365.2	AB043960	Bruguiera gymnorhiza	BAE36422.1	Nicotiana tabacum
CAE35601.1	X17578	Solanum tuberosum	BAE93039.1	Brassica napus
CAE78043.1	Z11999	Lycopersicon esculentum	AAE1647.1	Sorghum bicolor
BAE02554.1	D13297	Pisum sativum	AAE98390.1	Scutellaria baicalensis
CAE04808.1	AF037457	Fritillaria agrestis	AAE17077.1	Forsythia x intermedia
CAE23062.1	X05548	Spinacia oleracea	BAE34849.1	Gentiana triflora
CAE40670.1	X57408	Triticum aestivum	BAE12737.1	Nicotiana tabacum
AAE38521.1	AF139818	Brassica napus	CAE28303.1	Dortheanthus bellidiformis
AAE55562.1	AF110780	Volvox carteri f. nagariensis	CAE54621.1	Manihot esculenta
CAE36674.1	X52427	Lycopersicon esculentum	BAE41019.1	Vitis vinifera
SEQ ID NO. 2109			BAE41020.1	Vitis vinifera
CAE55090.1	X78284	Medicago sativa	BAE36653.1	Nicotiana tabacum
CAE12883.1	AJ7295006	Nicotiana tabacum	BAE41025.1	Vitis vinifera
BAE92964.1	AF001551	Oryza sativa	BAE41023.1	Vitis vinifera
BAE82139.1	AF022736	Oryza sativa	BAE41022.1	Vitis vinifera
CAE64625.1	X95313	Chlamydomonas reinhardtii	BAE41021.1	Vitis vinifera

BAA19659.1	AB002810	Perilla frutescens	CAC22329.1	AJ298303	Fagus sylvatica
BAB41026.1	AB047099	Vitis vinifera	BAE67852.1	L76377	Oryza sativa
BAB41026.1	AB047097	Vitis vinifera	CAB36911.1	AJ000692	Quercus suber
AAK28360.1	AF346432	Nicotiana tabacum	SEQ ID NO. 2120		
AAK28362.1	U32643	Nicotiana tabacum	ABA61593.1	AF003125	Mesembryanthemum crystalli
BAE41017.1	AB047090	Vitis labrusca x Vitis vinifera	AAA33665.1	M31713	Pisum sativum
BAE41017.1	AB027454	Petunia x hybrida	AAO02175.1	AF039662	Capsicum annuum
BAE41017.1	AB027454	Lycopersicon esculentum	AAA34028.1	M35660	Spinacia oleracea
CRA59450.1	X85138	Manihot esculenta	AAA36281.1	X02432	Silene latifolia subsp. alba
CRA54614.1	X77464	Manihot esculenta	CRA9756.1	Z75520	Lycopersicon esculentum
CRA54611.1	X77461	Manihot esculenta	AAA33459.1	M73829	Zea mays
CRA54613.1	X77463	Manihot esculenta	AAA33460.1	M73830	Zea mays
SEQ ID NO. 2116			CAA52980.1	X75089	Triticum aestivum
ADA4809.1	AF148648	Nicotiana tabacum	BAA06436.1	D30763	Oryza sativa
ADA4808.1	AF147203	Spinacia oleracea	AAA33462.1	M73828	Zea mays
SEQ ID NO. 2118			BAA32348.1	AB016810	Zea mays
AAE5090.1	AF178653	Vitis riparia	AAK15005.1	AE233452	Impatiens balsamina
CRA51432.1	X72928	Solanum commersonii	AAE49717.1	U29316	Chlamydomonas reinhardtii
CRA7601.1	X7121	Solanum commersonii	AAA33085.1	L10349	Chlamydomonas reinhardtii
CAC34055.1	AJ297410	Capsicum annuum	CAB07068.1	Z46944	Citrus sinensis
CAA47047.1	X66416	Lycopersicon esculentum	ABE65699.1	AF010320	Oryza sativa
AAE23375.1	S44889	Nicotiana tabacum	CAA73265.1	Y12734	Physcomitrella patens
AAE22459.2	S40046	Nicotiana tabacum	AAA33461.1	M73831	Zea mays
AAE16625.1	AY007309	Solanum dulcamara	BAA06456.1	D30754	Oryza sativa
CAA46623.1	X65701	Nicotiana tabacum	BAA90760.1	AB038037	Ipomoea nil
CAA46622.1	X65700	Nicotiana tabacum	BAA19865.1	D83660	Oryza sativa
CAA51431.1	X72927	Solanum commersonii	SEQ ID NO. 2121		
CAA64620.1	X95308	Nicotiana tabacum	AAE32141.1	AF123503	Nicotiana tabacum
CAA51430.1	X72926	Solanum commersonii	CAA42636.1	X60033	Glycine max
AAE61471.1	AF093743	Lycopersicon esculentum	BAA96221.1	AP002094	Oryza sativa
AAE61590.1	AF003007	Vitis vinifera	SEQ ID NO. 2122		
BAA11180.1	D76437	Nicotiana sylvestris	AAE33772.1	AF093751	Brassica oleracea
AAE34087.1	M64081	Nicotiana tabacum	AAE37228.1	U22105	Brassica napus
CAA71669.1	X67244	Solanum commersonii	AAA73945.1	L33904	Brassica oleracea
AAE11883.1	X10932	Vitis vinifera	AAA73946.1	L33905	Brassica oleracea
AAE13707.1	AF193508	Fragaria x ananassa	AAE64310.1	U22174	Brassica napus
AAE34089.1	M29279	Nicotiana tabacum	AAA73947.1	L33906	Brassica oleracea
CAA43854.1	X61679	Nicotiana tabacum	AAE73948.1	L33907	Brassica oleracea
CAA04642.1	AB001266	Hordeum vulgare			
CAC22330.1	AJ298304	Fagus sylvatica			

RAA32995.1	L29767	Brassica oleracea	CRAC4221.1	X94449	Pimpinella brachycarpa
RAE29777.1	AE228333	Gossypium hirsutum	RAA93463.1	AB028075	Physcomitrella patens
RAF35186.1	AF195865	Gossypium hirsutum	RAF19980.1	AE211193	Oryza sativa
RAF35184.1	AF195863	Gossypium hirsutum	CAK65456.2	X96681	Oryza sativa
RAC00499.1	AF044204	Gossypium hirsutum	CAK31270.1	AC099890	Oryza sativa
RAA09107.1	AF101038	Brassica napus	RAA37700.1	AF145731	Oryza sativa
RAA57599.1	U15153	Gossypium hirsutum	RAA37695.1	AF145726	Oryza sativa
RAE34774.1	S78173	Gossypium hirsutum	RAA37696.1	AF145727	Oryza sativa
RAE28533.1	AF329829	Corylus avellana	CAA06717.1	AJ005820	Craterostigma plantaginum
RAF28385.1	AF151214	Nicotiana glauca	RAA93462.1	AB028074	Physcomitrella patens
RAA34032.1	M58635	Spinacia oleracea	BAA05622.1	D26573	Daucus carota
RAA49860.1	U72765	Phaseolus vulgaris	RAA37698.1	AF145729	Oryza sativa
RAF26449.1	AF221501	Prunus avium	BAA05625.1	D26576	Daucus carota
RAF35185.1	AF195864	Gossypium hirsutum	BAA21017.1	D26578	Daucus carota
RAF26450.1	AF221502	Malus x domestica	RAF01765.1	AF184278	Glycine max
CAAS0660.1	X71667	Sorghum bicolor	RAF01764.2	AF184277	Glycine max
CRA05771.1	A7002958	Cicer arietinum	BAA93464.1	AB028076	Physcomitrella patens
CRA65475.1	X96714	Prunus dulcis	BAA05624.1	D26575	Daucus carota
RAF26451.1	AF221503	Pyrus communis	RAA93466.1	AB028078	Physcomitrella patens
CAE65477.1	X96716	Prunus dulcis	CAE67118.1	Y17306	Lyopersicon esculentum
ADA46683.1	AF171094	Lilium longiflorum	BAA93468.1	AF028080	Physcomitrella patens
CRA50661.1	X71668	Sorghum bicolor	RAA37697.1	AF145728	Oryza sativa
X62395	X62395	Nicotiana tabacum	RAF73482.1	AF268442	Brassica rapa subsp. pekinensis
AAAG1050.1	I31938	Brassica rapa	BAA05623.1	D26574	Daucus carota
AAAG1050.1	J04176	Zea mays	BAA93465.1	AB028077	Physcomitrella patens
CAE96874.1	AJ277164	Malus x domestica	SSQ ID NO. 2124		
CAE85484.1	Z37115	Hordeum vulgare	RAA32913.1	M32885	Persea americana
RAE27707.1	AF302788	Triticum aestivum	AAAL9701.1	L24438	Thlaspi arvense
CRA83459.1	Z31588	Gerbera hybrida	RAC39318.1	AF029858	Sorghum bicolor
AF198168		Aerides japonica	BAB40323.1	AB037244	Asparagus officinalis
AAAF4624.1	U31766	Oryza sativa	BAE94589.1	AF022460	Glycine max
AAAF70539.1	AF017359	Oryza sativa	CAA70575.1	Y09423	Nepeta racemosa
AAAF06443.1	U66105	Zea mays	BAB40324.1	AB037245	Asparagus officinalis
CRA85483.1	Z37114	Hordeum vulgare	RAF03635.1	D14990	Solanum melongena
CAE50662.1	X71669	Sorghum bicolor	RAF27282.1	AF122821	Capsicum annuum
SSQ ID NO. 2123			CAE50645.1	X71654	Solanum melongena
CAE06728.1	AF005833	Craterostigma plantaginum	BAE94594.1	AF022157	Glycine max
CRA64491.1	X95193	Pimpinella brachycarpa	CAAS0312.1	X70981	Solanum melongena
CRA63222.1	X24389	Glycine max	BAE94598.1	AF022459	Glycine max
CRA64152.1	X94373	Pimpinella brachycarpa	CAA70576.1	Y09424	Nepeta racemosa

ABA47832.1	AF166332	Nicotiana tabacum	BA05649.1	D26602	Nicotiana tabacum
CA356503.1	A2238612	Catharanthus roseus	AD423582.1	AF138443	Glycine max
BA040322.1	BA036772	Triticum aestivum	CA03202.1	AF29233	Chlamydomonas eugametos
CA03941.1	Z33875	Mentha x piperita	BA03669.1	AS011968	Oryza sativa
AD44150.1	AF124815	Mentha x piperita	BA030814.1	AF001168	Oryza sativa
AG44132.1	AF218296	Pisum sativum	CA039329.1	AF062479	Oryza sativa
CA04635.1	X95342	Nicotiana tabacum	AA033443.1	L15390	Zea mays
AD44151.1	AF124816	Mentha x piperita	CA050270.1	AF048691	Oryza sativa
CA045580.1	X96784	Nicotiana tabacum	BA05396.1	AF000615	Oryza sativa
BA012159.1	D33968	Glycine max	AA119401.1	AF203479	Glycine max
BA013076.1	D86351	Glycine max	CA05244.1	X95997	Solanum tuberosum
AD038930.1	AF135485	Glycine max	AA046110.1	AC073166	Oryza sativa
CA072196.1	Y11368	Zea mays			
CA057425.1	X81831	Zea mays			
AD056282.1	AF153332	Petunia x hybrida			
AD44152.1	AF124817	Mentha x piperita			
CA057423.1	X81829	Zea mays			
SQ ID NO. 2125					
CA008995.1	AJ010091	Brassica napus	BA04543.1	M55147	Chloroplast Pisum sativum
BA005648.1	D26601	Nicotiana tabacum	BA05402.1	AF000615	Oryza sativa
CA008997.1	AJ010093	Brassica napus	AA034076.1	M14418	Nicotiana tabacum
AA034436.1	AF172282	Oryza sativa	AA033780.1	L26923	Pinus sylvestris
CA04261.2	AJ000728	Lycopersicon esculentum	AA068655.1	L27668	Chloroplast Chlamydomonas
CA024705.1	AJ020651	Nicotiana tabacum	rsinbardii		
AA067262.1	AF165186	Nicotiana tabacum	AA033464.1	M18976	Zea mays
AG040578.1	AF216314	Oryza sativa	CA033455.1	X15408	Zea mays
AA034002.1	M67749	Glycine max	CA036396.1	X52148	Pisum sativum
CA038393.1	U83625	Zea mays	AA034075.1	M1417	Nicotiana tabacum
AA023900.1	AF194413	Oryza sativa	BA04304.1	AS035312	Chlamydomonas sp. W80
CA009580.1	AJ296992	Fagus sylvatica	BA02133.1	AF022730	Oryza sativa
AA033901.2	AF194414	Oryza sativa	BA066887.1	AF010582	Marsilea quadrifolia
BA006731.1	D31964	Nicotiana tabacum	CA060300.1	AJ0003783	Oryza sativa
CA078961.1	Z17313	Malus x domestica	AA023800.1	AF260734	Cucurbita pepo
CA086286.1	Z38126	Malus x domestica	AA033779.1	L07501	Pinus sylvestris
AD08721.1	AF038570	Dunaliella tertiolecta	AA010215.1	L32560	Chloroplast Pinus sylvestris
CA073067.1	Y12464	Sorghum bicolor	CA033352.1	L26924	Ginkgo biloba
CA053979.1	AF325168	Nicotiana tabacum	CA040492.1	AJ001706	Pinus sylvestris
CA073068.1	Y12465	Sorghum bicolor	AD010214.1	L32561	Chloroplast Pinus sylvestris
CA071142.1	Y10036	Cucumis sativus	CA039974.1	AJ133422	Nicotiana tabacum
CA057898.1	X82548	Hordeum vulgare	BA037578.1	U45855	Zea mays
			CA051676.1	X73151	Zea mays
			BA059010.1	U96623	Selaaginella lepidophylla
			CA042901.1	X60343	Hordeum vulgare
			AA089207.1	L26922	Taxus baccata

AAA87549.1	U45856	Zea mays	AAA03618.1	M80608	Lycopersicon esculentum
AAA03369.1	U02886	Atriplex nummularia	AAAC19114.1	AF067863	Solanum tuberosum
AAA53269.1	U75597	Atriplex nummularia	AAAL18928.1	U01901	Solanum tuberosum
AAA33033.1	J05223	Mesembryanthemum crystallinum	AAAG3539.1	M60403	Nicotiana tabacum
AAA33033.1	J05255	Mesembryanthemum crystallinum	AAAG3540.1	M60403	Nicotiana tabacum
AAA55116.1	U78307	Craterostigma plantagineum	AAAB8794.1	U01900	Solanum tuberosum
AAA87580.1	U45857	Zea mays	AAAG3541.1	M59442	Nicotiana tabacum
AAA42103.1	X59517	Antirrhinum majus	AAAB82772.2	AF001523	Musa acuminata
AAA82047.1	U31676	Oryza sativa	AAAR08679.1	AF004838	Solanum tuberosum
AAAG23799.1	AF260733	Cucurbita pepo	AAAL1911.1	U01302	Glycine max
AAAG23799.1	AF260733	Cucurbita pepo	AAAC04710.1	AF034106	Glycine max
AAAG23904.1	X60346	Petunia x hybrida	AAAC04714.1	AF034113	Glycine max
AAA51071.1	X72381	Physcomitrella patens	CAB91554.1	AU277900	Vitis vinifera
CMA42905.1	X60347	Magnolia liliiflora	AAA34082.1	M20620	Nicotiana tabacum
SEQ ID NO. 2128			CAA03908.1	AJ000081	Citrus sinensis
CAA72092.1	Y11209	Nicotiana tabacum	AAAB03501.1	U41323	Glycine max
AAAD0269.1	AF036939	Chlamydomonas reinhardtii	AAAB02013.1	U49454	Prunus persica
AAAC49896.1	AF027727	Chlamydomonas reinhardtii	AAA33946.1	M37753	Glycine max
AAAD5566.1	AF110784	Volvox carterii f. nagariensis	AAAG3542.1	M59443	Nicotiana tabacum
CAC21230.1	AJ277379	Triticum turgidum subsp. durum	AAAF34761.1	AF227953	Capsicum annuum
AAAL19660.1	U11496	Triticum aestivum	AAAG33981.1	AF141654	Nicotiana tabacum
CAC21231.1	AJ277380	Triticum turgidum subsp. durum	AAAG34080.1	AF294849	Capsicum annuum
CAC21229.1	AJ277378	Triticum turgidum subsp. durum	AAAF3408.1	AF230109	Populus x canescens
CAC21228.1	AJ277377	Triticum turgidum subsp. durum	AAAG33880.1	AF141653	Nicotiana tabacum
AAAB05641.1	U41385	Ricinus communis	CAA57259.1	X81560	Nicotiana tabacum
CAA77575.1	Z11499	Medicago sativa	AAA34053.1	M60464	Nicotiana tabacum
AAAD28260.1	AF131223	Datisca glomerata	SEQ ID NO. 2131		
AAAG32322.1	AF039278	Oryza sativa	AAAD37698.1	AF145729	Oryza sativa
BAAY7026.1	AB026252	Lithospermum erythrorhizon	BAAD05624.1	D26575	Daucus carota
SEQ ID NO. 2130			AAAF01765.1	AF184278	Glycine max
AAAG7456.1	U22147	Hevea brasiliensis	CAAG44417.1	X94947	Lycopersicon esculentum
CAB338443.1	AJ133470	Hevea brasiliensis	BAAG3465.1	AB028077	Physcomitrella patens
AAAG24921.1	AF311749	Hevea brasiliensis	BAB18171.1	AB042769	Zinnia elegans
AAAF44667.1	AF239617	Vitis vinifera	BAAG3466.1	AB028072	Physcomitrella patens
ABAB14551.1	U27179	Medicago sativa subsp. sativa	BAAG3466.1	AB028078	Physcomitrella patens
BAAB24398.1	X51479	Plum sativum	BAAG3461.1	AB028073	Physcomitrella patens
BAAB23789.1	X53129	Phaseolus vulgaris	BAAG05625.1	D26576	Daucus carota
AAAB40678.1	M63634	Nicotiana plumbaginifolia	BAAG05622.1	D26573	Daucus carota
AAAB1643.1	M33120	Nicotiana plumbaginifolia	BAAG3467.1	AB028079	Physcomitrella patens
CAA0361.1	X07280	Nicotiana plumbaginifolia	BAAG3461.1	AB028076	Physcomitrella patens

AA037697.1	AF145728	Oryza sativa	CAC10514.1	AJ299019	Samanea saman
AA01764.2	AF184277	Glycine max	CAC05488.1	AJ271446	Populus tremula x Populus
BR021017.1	U26578	Daucus carota	tremuloides		
BR018168.1	AB042766	Zinnia elegans	SEQ ID NO. 2134		
BR034468.1	AB028080	Physcomitrella patens	CRA55693.1	X79086	Zea mays
BR005623.1	D26574	Daucus carota	CRA55691.1	X79085	Zea mays
AA037699.1	AF145730	Oryza sativa	AAF97508.1	AF242298	Oryza sativa
AA038144.1	AF139497	Prunus amenlaqua			
AA03768.2	AF139748	Helianthus annuus	SEQ ID NO. 2135		
BR034463.1	AB028075	Physcomitrella patens	AG43509.1	AF210049	Petunia x hybrida
BR044891.1	X95193	Pimpinella brachycarpa	CMA44807.1	X63093	Lycopersicon esculentum
BR044891.1	X94449	Pimpinella brachycarpa			
BR044891.1	X94375	Pimpinella brachycarpa	SEQ ID NO. 2136		
AA037700.1	AF145731	Oryza sativa	RA641776.1	AF212990	Cucurbita maxima
AA037695.1	AF145726	Oryza sativa	RA612433.1	AB025030	Coptis japonica
CR006728.1	AA005833	Cratogeomys plantagineum	RA617562.1	U72854	Eustoma grandiflorum
CR062608.1	X31212	Lycopersicon esculentum	CRA55649.1	X71856	Solanum melongena
CR063222.1	X32489	Glycine max	RA056284.1	AF155332	Petunia x hybrida
CR065456.2	X36681	Oryza sativa	RA094381.1	AF022458	Glycine max
RAF19980.1	AF211193	Oryza sativa	RA039453.1	AF014801	Eschscholzia californica
			RA039452.1	AF014800	Eschscholzia californica
SEQ ID NO. 2132			RA032913.1	M32885	Persea americana
RAF33669.1	AF079871	Nicotiana tabacum	RA050155.1	X70924	Solanum melongena
RAF33670.1	AF079872	Nicotiana tabacum	RA050648.1	X71657	Glycine max
RA033255.1	U65390	Nicotiana tabacum	RA054593.1	AF022464	Glycine max
CR062555.1	AJ249962	Daucus carota	RA094588.1	AF022459	Glycine max
CR062554.1	X96390	Lycopersicon esculentum	RA084071.1	AB028151	Antirrhinum majus
RA096150.1	AF002092	Oryza sativa	RA070521.1	AF191772	Papaver somniferum
CR054856.1	AJ132686	Zea mays	RAF05621.1	AF191772	Nepeta racemosa
RA056192.1	AF002093	Oryza sativa	CA070575.1	Y09423	Petunia x hybrida
RA039492.1	AF145272	Samanea saman	RA032774.1	AF081575	Lycopersicon esculentum x
CR056175.1	X79779	Solanum tuberosum	RA037433.1	AF150881	Lycopersicon esculentum
CR068912.1	Y07632	Zea mays	Lycopersicon		
CA071598.1	Y10579	Vicia faba	RA052994.1	AB006790	Petunia x hybrida
CR005489.1	AJ271447	Populus tremula x Populus	RA030324.1	AB037245	Asparagus officinalis
tremuloides			CA070576.1	Y09424	Nepeta racemosa
RA016278.1	AF099095	Samanea saman	RA094589.1	AF022460	Glycine max
RAF01251.1	AF267755	Nesembryanthemum crystallinum	RA040323.1	AB037244	Asparagus officinalis
BR044085.1	AB032074	Nicotiana paniculata	RAF07832.1	AF166332	Nicotiana tabacum
RAF36832.1	AF207745	Triticum aestivum			
CRA12645.1	AJ225805	Egeria densa	SEQ ID NO. 2138		

[illegible]

ABA06594.1	U38651	Medicago truncatula	BA06628.1	AF002482	Oryza sativa
CBA07812.1	233755	Vicia faba	CBA73068.1	V12465	Sorghum bicolor
CBA07324.1	X66856	Nicotiana tabacum	CBA73067.1	V12464	Sorghum bicolor
CBA07077.1	Y09590	Vitis vinifera	CBA63244.1	X35997	Solanum tuberosum
AAA79761.1	L08196	Ricinus communis	CBA07813.1	XJ007990	Hordeum vulgare
AAA79857.1	L08188	Ricinus communis	CBA46556.1	X65606	Hordeum vulgare
BBB19863.1	AE052884	Oryza sativa	CBA46554.1	X65604	Hordeum vulgare
CBA52689.1	AJ132224	Lycopersicon esculentum	BA05457.1	U55768	Oryza sativa
CBA09419.1	AJ010942	Lycopersicon esculentum	CBA62693.1	AF004947	Oryza sativa
CBA06079.1	Z83829	Picea abies	BA083689.1	AB011968	Oryza sativa
BBB19862.1	AB052883	Oryza sativa	BA083688.1	AB011967	Oryza sativa
CBA6813.1	Y07520	Chlorella kessleri	BAF22219.1	AF141378	Zea mays
CBA39036.1	X55349	Chlorella kessleri	BAF34675.1	AB011670	Triticum aestivum
CBA5192.1	X75440	Chlorella kessleri	SEQ ID NO. 2164		
CBA52688.1	AJ132223	Lycopersicon esculentum	AAB58348.1	U29095	Triticum aestivum
BA05054.1	AF173655	Beta vulgaris	BA000239.1	U73938	Nicotiana tabacum
CBA52690.1	AJ132225	Lycopersicon esculentum	AAA96325.1	M94726	Triticum aestivum
BA043998.1	AF215837	Apium graveolens var. dulce	CBA81443.1	Z26846	Mesembryanthemum crystallinum
BAF74567.1	AF215853	Solanum tuberosum	BA060195.1	AC084763	Oryza sativa
BAF74565.1	AF215851	Spinacia oleracea	BAJ19573.1	AB002109	Oryza sativa
BAF74566.1	AF215852	Nicotiana tabacum	BAJ13608.1	D88399	Oryza sativa
BAF74568.1	AF215854	Zea mays	BA000240.1	U73939	Nicotiana tabacum
SEQ ID NO. 2163			BA068962.1	L38855	Glycine max
BA068962.1	L38855	Glycine max	CAA06503.1	AD005373	Cratogeomys plantagineum
CAA06503.1	AD005373	Cratogeomys plantagineum	BAF27340.1	AF186020	Vicia faba
BA060195.1	AC084763	Oryza sativa	BA098509.1	AF100162	Chlamydomonas reinhardtii
BAJ13608.1	D88399	Oryza sativa	BA09628.1	AF002482	Oryza sativa
BA000239.1	U73938	Nicotiana tabacum	CBA73067.1	Y12464	Sorghum bicolor
BAJ19573.1	AB002109	Oryza sativa	CAA71142.1	Y10036	Cucumis sativus
BA058348.1	U29095	Triticum aestivum	BA023582.1	AF128443	Glycine max
BA000240.1	U73939	Nicotiana tabacum	CAA73068.1	Y12465	Sorghum bicolor
CAA81443.1	Z26846	Mesembryanthemum crystallinum	BA05649.1	D26602	Nicotiana tabacum
BAF27340.1	AF186020	Vicia faba	CAA65244.1	X95997	Solanum tuberosum
BA098509.1	AF100162	Chlamydomonas reinhardtii	CAA57898.1	X82548	Hordeum vulgare
BAF23582.1	AF128443	Glycine max	CAA99329.1	AF062479	Oryza sativa
BA05649.1	D26602	Nicotiana tabacum	CAA07813.1	AJ007990	Hordeum vulgare
BAF23582.1	AF128443	Glycine max	CBA46556.1	X65606	Hordeum vulgare
BA05649.1	D26602	Nicotiana tabacum	BA05457.1	U55768	Oryza sativa
CAA71142.1	Y10036	Cucumis sativus	CBA46554.1	X65604	Hordeum vulgare
BA057898.1	AF062479	Hordeum vulgare	BAF22219.1	AF141378	Zea mays

BA03688.1	AB011967	Oryza sativa	BA03688.1	AB028650	Nicotiana tabacum
BA03689.1	AB011968	Oryza sativa	BA03689.1	AB029165	Glycine max
BA03675.1	AB011969	Triticum aestivum	BA03675.1	AF3028	Zea mays
BA062693.1	AF004947	Oryza sativa	BA062693.1	AZ10616	Zea mays
SEQ ID NO. 2165			BA023339.1	D86619	Oryza sativa
CA072217.1	Y11483	Brassica napus	CA072217.1	Y11414	Oryza sativa
CA072270.1	Y11482	Brassica napus	BA01733.2	AB029162	Glycine max
BA072097.1	AF021257	Hordeum vulgare	BA08224.1	AB028652	Nicotiana tabacum
BA072096.1	AF021256	Hordeum vulgare	CA066952.1	X98308	Lycopersicon esculentum
SEQ ID NO. 2166			SEQ ID NO. 2169		
BA086424.1	U44386	Lycopersicon esculentum	BA05893.1	AF002071	Oryza sativa
BA050766.1	AF192758	Glycine max	CB051834.1	00069	Oryza sativa
SEQ ID NO. 2168			AB009771.1	U67422	Zea mays
BA019619.1	AF336286	Gossypium hirsutum	BA011566.1	AF318490	Lycopersicon hirsutum
CA064614.1	X95296	Lycopersicon esculentum	CA097692.1	273295	Catharanthus roseus
CA050224.1	X70879	Hordeum vulgare	BA011674.1	AF339747	Lophopyrum elongatum
CA050222.1	X70877	Hordeum vulgare	BA043496.1	AF131222	Lophopyrum elongatum
CA050221.1	X70876	Hordeum vulgare	BA076313.1	AF220603	Lycopersicon esculentum
BA03337.1	D86617	Oryza sativa	BA074721.1	U59316	Lycopersicon esculentum
BA023338.1	D86618	Oryza sativa	BA074723.1	U59315	Lycopersicon esculentum
CA072218.1	Y11415	Oryza sativa	AC08914.1	U02271	Lycopersicon pimpinellifolium
CA078386.1	Z13996	Petunia x hybrida	BA01567.1	AF318491	Lycopersicon pimpinellifolium
BA019616.1	AF336283	Gossypium hirsutum	BA021965.1	AF028699	Lycopersicon hirsutum
CA043399.1	A0006292	Antirrhinum majus	BA025966.1	AF302082	Brassica napus
CA050225.1	X70880	Hordeum vulgare	BA01569.1	AF318493	Nicotiana tabacum
BA019611.1	AF336278	Gossypium hirsutum	BA066615.1	AF142596	Lycopersicon hirsutum
BA019617.1	AF336284	Gossypium hirsutum	BA03090.1	AF073405	Nicotiana tabacum
CA072186.1	Y11351	Oryza sativa	BA083373.1	AF000391	Oryza sativa
CA067600.1	X95210	Lycopersicon esculentum	BA047687.1	AF000559	Oryza sativa
BA019615.1	AF336282	Gossypium hirsutum	CA074662.1	Y14286	Brassica oleracea
BA019618.1	AF336285	Gossypium hirsutum	CA073133.1	X98320	Brassica oleracea
BA01732.1	AB023161	Glycine max	BA011568.1	Y12530	Lycopersicon hirsutum
CA072185.1	Y11350	Oryza sativa	BA078764.1	AF023482	Oryza sativa
BA013574.1	AC037425	Oryza sativa	BA094509.1	AB041503	Populus nigra
BA01731.1	AB029160	Glycine max	BA094510.1	AB041504	Populus nigra
BA01730.1	AB025159	Glycine max	SEQ ID NO. 2172		
CA078387.1	Z13997	Petunia x hybrida	BA024422.1	AB001379	Glycyrrhiza echinata

BAR74465.1	AB022732	Glycyrrhiza echinata	AG34808.1	AF243373	Glycine max
CBB3505.1	AJ239051	Cicer arietinum	AG34800.1	AF243365	Glycine max
CBB4190.1	AJ238439	Cicer arietinum	CAR71784.1	Y10820	Glycine max
CRA10067.1	AB012581	Cicer arietinum	AG34844.1	AF244701	Zea mays
BBA93634.1	AB025016	Lotus japonicus	AAA68430.1	J03679	Solanum tuberosum
CA04117.1	AJ000478	Helianthus tuberosus	CMA04391.1	AF000923	Carica papaya
CA04116.1	AJ000477	Helianthus tuberosus	AG34831.1	AF244688	Zea mays
AA056282.1	AF155332	Petunia x hybrida	CA001847.1	AF010448	Alopecurus myosuroides
BBA12159.1	D83968	Glycine max	CA009188.1	AF010449	Alopecurus myosuroides
AB94590.1	AF022461	Glycine max	AG34802.1	AF243367	Glycine max
CAA65580.1	X96784	Nicotiana tabacum	AG34805.1	AF243370	Glycine max
AAA32913.1	M32885	Persea americana	AG34832.1	AF244689	Zea mays
AA099208.1	AF175278	Pisum sativum	AG34837.1	AF244694	Zea mays
CBB56742.1	AJ249800	Cicer arietinum	AG34836.1	AF244693	Zea mays
AAC49188.2	U29333	Pisum sativum	AG34849.1	AF244706	Zea mays
AG44132.1	AF218296	Pisum sativum	CAC24549.1	AJ296343	Cichorium intybus x Cichorium
BBA13076.1	D86351	Glycine max	endivia		
AAC39454.1	AF014602	Eschscholzia californica	AG32118.1	AF051214	Picea mariana
CAR64635.1	X95342	Nicotiana tabacum	AG334795.1	AF243360	Glycine max
AA038930.1	AF135405	Glycine max	AG34841.1	AF244698	Zea mays
AB17562.1	U72634	Eustoma grandiflorum	AG29773.1	AF159229	Gossypium hirsutum
BAA92894.1	AB006750	Petunia x hybrida	SEQ ID NO. 2174		
AAC32274.1	AF081575	Petunia x hybrida	AG67714.1	AF013161	Prunus serotina
BAA84072.1	AB028152	Torenia hybrida	CRA51194.1	X72617	Prunus serotina
CAA50155.1	X70824	Solanum melongena	AA038536.1	U78814	Prunus serotina
BAB40324.1	AB037245	Asparagus officinalis	CRA69388.1	Y08211	Prunus dulcis
AB037245	AB037245	Asparagus officinalis	AA038536.1	AF040079	Prunus serotina
AB037245	AB037245	Asparagus officinalis	AA038536.1	AF040079	Prunus serotina
BAA74466.1	AB022733	Glycyrrhiza echinata	AA038536.1	AF040079	Prunus serotina
SEQ ID NO. 2173			AA038536.1	AF040079	Prunus serotina
AAF64450.1	AF233928	Euphorbia esula	AA038536.1	AF053886	Prunus serotina
AG34800.1	AF243368	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34796.1	AF243361	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34809.1	AF243374	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34797.1	AF243362	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34807.1	AF243372	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34798.1	AF243363	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34801.1	AF243366	Glycine max	AA038536.1	AF053886	Prunus serotina
AG34810.1	AF243375	Glycine max	AA038536.1	AF053886	Prunus serotina
AA038566.1	AF048978	Glycine max	AA038536.1	AF053886	Prunus serotina
SEQ ID NO. 2176			AA038536.1	AF053886	Prunus serotina
CAA88994.1	X84208	Sinapis alba	AA038536.1	AF053886	Prunus serotina
CAA76116.1	Y16190	Sinapis alba	AA038536.1	AF053886	Prunus serotina
SEQ ID NO. 2177			AA038536.1	AF053886	Prunus serotina
CAA68190.1	X99922	Brassica napus	AA038536.1	AF053886	Prunus serotina

RA020848.1	AF086839	Populus tremula x Populus	AA028490.1	AF196350	Lophopyrum elongatum
RAA36555.1	AB011798	Citrus unshiu	SEQ ID NO. 2190		Mesembryanthemum crystallini
CAB66329.1	AJ279687	Betula pendula	AAF05112.1	AF158091	Lycopersicon esculentum
AACT7357.1	U79562	Psidium sativum	AAF19402.1	AF203480	Lycopersicon esculentum
CAB61887.1	AJ250003	Lycopersicon esculentum	AAF03480.1	AF203481	Kalanchoe fedtschenkoi
RAA36556.1	AB011799	Citrus unshiu	AAF06969.1	AF162661	Kalanchoe fedtschenkoi
BA040808.1	AB058921	Nicotiana suaveolens x	AAF06970.1	AF162662	Glycine max
Nicotiana tabacum			AAF19401.1	AF203479	Brassica napus
RAA36804.1	U68560	Malus x domestica	AAF19404.1	AF203482	Ipomoea batatas
BA040809.1	AB058922	Nicotiana suaveolens x	CAA39336.1	X56599	Daucus carota
Nicotiana tabacum			AA017800.1	AF090835	Mesembryanthemum crystallinum
AA032147.1	AF051247	Picea mariana	AA028192.2	AF15406	Solanum tuberosum
CRB56223.1	AJ133276	Hordeum vulgare	AA088537.1	AF035944	Fragaria x ananassa
CRB56224.1	AJ133277	Hordeum vulgare	AA025423.1	AF072908	Nicotiana tabacum
RA024568.2	AF055909	Zea mays	AA080693.1	U69174	Glycine max
			BA012715.1	D85039	Zea mays
SEQ ID NO. 2188			CAA57156.1	X81393	Medicago sativa
CR021222.1	AJ298252	Nicotiana tabacum	CAA57157.1	X81394	Oryza sativa
RA024567.1	AF071893	Prunus americana	BA080814.1	AB001168	Oryza sativa
AA023699.1	AF193803	Oryza sativa	AA06507.1	U28376	Zea mays
BA016083.1	AB036883	Oryza sativa	AA049684.1	U90262	Cucurbita pepo
AA063205.1	AF245119	Mesembryanthemum crystallinum	AA070706.1	U82087	Tortula ruralis
CAB96900.1	AJ251250	Catharanthus roseus	CAA07481.1	AA007366	Zea mays
CAB96899.1	AJ251249	Catharanthus roseus	AA049405.1	U08140	Vigna radiata
BA078738.1	AB023482	Oryza sativa	BA085396.1	AF000615	Oryza sativa
AA076898.1	AF274033	Atriplex hortensis	AA05270.1	AF048691	Oryza sativa
BA099376.1	AF002526	Oryza sativa	BA012338.1	D84408	Zea mays
SEQ ID NO. 2189			CAA57156.1	X81393	Oryza sativa
AA060173.1	AF236068	Elaeis guineensis	BA081749.1	AB017515	Marchantia polymorpha
AA023407.1	AF112887	Populus x canescens	BA081751.1	AB017517	Marchantia polymorpha
AA016973.1	AF183903	Pekunia x hybrida	BA081750.1	AB017516	Marchantia polymorpha
AA016974.1	AF183904	Pekunia x hybrida	BA081748.1	AB017515	Marchantia polymorpha
CAA78483.1	Z14110	Lilium longiflorum	AA080692.1	U69173	Glycine max
CAA78482.1	Z14109	Brassica napus	BA013232.1	D87042	Zea mays
CAA66310.1	X97725	Zea mays	AA061682.1	L27484	Zea mays
CAA66311.1	X97726	Zea mays	AA061610.1	AC073166	Oryza sativa
CAA67886.1	X80820	Zea mays	AA089202.1	Z49233	Chlamydomonas eugametos
AA049404.1	U58278	Triticum aestivum	BA02698.1	D13436	Oryza sativa
AA028460.1	AF195612	Lophopyrum elongatum	AA023900.1	AF194413	Oryza sativa

AAE21062.1	X826527	Dunaliella tertiolecta	AAAI9571.1	U10150	Brassica napus
AAE58750.1	X83869	Daucus carota	CAAT78201.1	Z12839	Lilium longiflorum
AAAI33443.1	L15390	Zea mays	BAH8840.1	AF000969	Oryza sativa
AAK26164.1	AY027885	Cucumis sativus	AAK36130.1	S61394	Oryza sativa
BAH21692.1	D84508	Zea mays	AAK36059.1	AF042840	Oryza sativa
BAH47181.1	S82324	Zea mays	LI8914	LI8914	Oryza sativa
BAH21691.1	D84507	Zea mays	AAA34237.1	Z120691	Oryza sativa
AAAG1179.1	AF289237	Zea mays	CAAT78288.1	Z12828	Oryza sativa
BAH22410.1	D38452	Zea mays	AAK32938.1	M27303	Hordeum vulgare
SEQ ID NO. 2191			CAAT78287.1	Z12827	Oryza sativa
BAAI13032.1	D86180	Pisum sativum	AAC49587.1	U49105	Triticum aestivum
SEQ ID NO. 2192			AAC49586.1	U49104	Triticum aestivum
RAAD01600.1	AF016713	Lycopersicon esculentum	AAC49583.1	U48692	Triticum aestivum
CAC07206.1	AJ278956	Brassica napus	AAC49585.1	U49103	Triticum aestivum
APC32034.1	AF023472	Hordeum vulgare	AAC49582.1	U48591	Triticum aestivum
AAE70002.1	AF213936	Prunus dulcis	AAC49580.1	U48689	Triticum aestivum
AAE707875.1	AF140606	Oryza sativa	AAC49579.1	U48688	Triticum aestivum
BAH19760.1	AB052788	Glycine max	AAC49578.1	U48242	Triticum aestivum
CAH393316.1	Z59370	Cucumis sativus	RAC46058.1	AF042839	Oryza sativa
BAH19757.1	AB052785	Glycine max	AAH85156.1	U20296	Solanum tuberosum
BAH19756.1	AF0032784	Glycine max	AAH10244.1	AF030032	Phaseolus vulgaris
AAH95642.1	AF000392	Lotus japonicus	CAH36644.1	X52396	Hedicago sativa
AAH16016.1	AF080345	Nepenthes alata	AAH83135.1	U20294	Solanum tuberosum
AAH2860.1	AF154930	Prunus dulcis	AAH8339.1	U79736	Helianthus annuus
SEQ ID NO. 2193			AAH2351.1	U20295	Solanum tuberosum
CAA61980.1	X89890	Bidens pilosa	AAA34238.1	Z20507	Vigna radiata
RAAF73157.1	AF150059	Brassica napus	AAH85157.1	U20297	Solanum tuberosum
AAH7825.1	AF000815	Oryza sativa	AAH33705.1	M80831	Petunia x hybrida
CAA67054.1	X98404	Capsicum annuum	CAAT74307.1	Y13974	Zea mays
AAH7347.1	M88307	Brassica juncea	CAA54583.1	X77397	Zea mays
AAH27432.1	AF2295637	Elaeis guineensis	SEQ ID NO. 2194		
AAH24243.1	X59751	Daucus carota	BAH32588.1	AB055807	Momordica charantia
AAH11418.1	AF292108	Prunus avium	AAA34180.1	J05094	Lycopersicon peruvianum
AAH26681.1	U13682	Pisum sativum	AAA34198.1	M59427	Lycopersicon peruvianum
AAH46588.1	U83402	Capsicum annuum	CAH61327.1	AF132473	Ananarthus hypochondriacus
AAH33706.1	M80836	Petunia x hybrida	CAA6745.1	J04099	Lycopersicon esculentum
AAH55511.1	AF108889	Capsicum annuum	CAH47461.1	X57076	Nicotiana tabacum
CAA43143.1	X60738	Mans x domestica	CAH78265.1	Z12619	Nicotiana tabacum
			CAA47460.1	X67075	Nicotiana tabacum

RAA34067.1	WT4102	Nicotiana sylvestris	AAK30005.1	AY029067	Rosa hybrid cultivar
RAAC9603.1	U03861	Solanum tuberosum	AAK35979.1	AF325168	Nicotiana tabacum
RAU02823.1	D13662	Nicotiana glauca X Nicotiana glauca	AAK5144.1	AF305911	Oryza sativa
RAA34199.1	K03290	Lycopersicon esculentum	BAB18104.1	AF042714	Chlamydomonas reinhardtii
RAA34200.1	M13938	Lycopersicon esculentum	BAB18105.1	AF042715	Chlamydomonas reinhardtii
RAA34203.1	L06985	Solanum tuberosum	BAK13067.1	Y12464	Sorghum bicolor
RAA78259.1	Z12611	Solanum tuberosum	CAC09580.1	AJ298992	Fagus sylvatica
RAA69781.1	L06606	Solanum tuberosum	AAK49592.1	X69971	Nicotiana tabacum
RAA48136.1	X79750	Solanum tuberosum	AAK23902.1	AF194415	Oryza sativa
CAA47907.1	X76755	Solanum tuberosum	AAK2659.1	AF177392	Oryza sativa
CAA57677.1	X82187	Zea mays	AAK11734.1	AY027437	Oryza sativa
CAA55588.1	X78988	Zea mays	CAA58466.1	X83440	Arachis hypogaea
CAA49593.1	X69972	Solanum tuberosum	AAK19402.1	AF203480	Petunia x hybrida
RAA33816.1	M17108	Solanum tuberosum	CAA73068.1	Y12465	Sorghum bicolor
CAA57307.1	X81647	Cucurbita maxima	AAK19403.1	AF203481	Lycopersicon esculentum
CAA57203.1	X81447	Cucurbita maxima	CAB61889.1	AJ251330	Oryza sativa
			AAK40580.1	AF216316	Oryza sativa
			AAK61238.1	AF241166	Oryza sativa
SEQ ID NO. 2195			SFO ID NO. 2196		Solanum tuberosum
RAK32599.1	AF080436	Oryza sativa	AAK32591.2	S74753	
CAC09581.1	AJ298393	Fagus sylvatica	SEQ ID NO. 2209		Trifolium repens
CAC09586.1	AJ298380	Fagus sylvatica	CAK09881.1	AJ011939	Medicago sativa
CAK09569.1	AJ010093	Brassica napus	CAK6228.1	X30695	Spinacia oleracea
AAK34436.1	AF172282	Oryza sativa	CAK71495.1	Y10469	Medicago sativa
CAK08995.1	AJ010091	Brassica napus	AAK1812.1	L36158	Spinacia oleracea
CAK08758.1	AJ009609	Brassica napus	AAK63024.1	AF244921	Glycine max
CAK08757.1	AJ009608	Nicotiana tabacum	AAK11483.1	X51193	Medicago sativa
BAK05648.1	D26601	Nicotiana tabacum	CAK62226.1	X30693	Medicago sativa
AAK67262.1	AF165186	Lycopersicon esculentum	CAA77387.1	AF024437	Scutellaria baicalensis
CAK04261.2	AJ000728	Lycopersicon esculentum	AAK11484.1	U51194	Glycine max
RAK46406.1	AF096250	Lycopersicon esculentum	BAK07564.1	D42065	Nicotiana tabacum
AAK10056.1	AF110518	Lycopersicon esculentum	AAK11481.1	U51191	Nicotiana tabacum
AAK10057.1	AF110519	Lycopersicon esculentum	BAK07663.1	D42064	Glycine max
RAA34002.1	M67449	Glycine max	AAK11482.1	U51192	Glycine max
BAK06731.1	D31964	Nicotiana tabacum	RAK49810.1	L36156	Medicago sativa
CAK06334.1	AJ005077	Lycopersicon esculentum	AAK39819.1	AF007211	Glycine max
BAK32405.1	AF055514	Nicotiana tabacum	CAB94692.1	AJ242742	Ipomoea batatas
CAK40578.1	AF216314	Oryza sativa			
CAK24705.1	AJ302651	Nicotiana tabacum			
AAK53393.1	U03625	Zea mays			

[illegible][illegible]

CAB46228.1	Y18055	<i>Arachis hypogaea</i>
RAE21652.1	AF216527	<i>Daniellia tertiolecta</i>
CAB89202.1	Z49433	<i>Chlamydomonas eugametos</i>
RAE23500.1	AF194413	<i>Oryza sativa</i>
RAE23501.1	AF194414	<i>Oryza sativa</i>
CAB87558.1	AF030879	<i>Solanum tuberosum</i>
CAB58750.1	X93869	<i>Daucus carota</i>
RAE47181.1	S82324	<i>Zea mays</i>
RAE22410.1	D38452	<i>Zea mays</i>
RAA12691.1	D84507	<i>Zea mays</i>
RAA12692.1	D84508	<i>Zea mays</i>
RAAG01179.1	AF0289237	<i>Zea mays</i>
CAC24961.1	AF009337	<i>Tridescentia virginiana</i>
RAE08814.1	AF001168	<i>Oryza sativa</i>
CAC32116.1	AF051211	<i>Picea mariana</i>
RAF06970.1	AF162662	<i>Kalanchoe fedtschenkoii</i>
RAF06969.1	AF162661	<i>Kalanchoe fedtschenkoii</i>
SEQ ID NO. 2305		
AB050571.1	U63784	<i>Catharanthus roseus</i>
CAB65911.1	AZ249831	<i>Lemna minor</i>
RAF18999.1	AF122155	<i>Allium cepa</i>
CAC26855.1	AF069951	<i>Enteromorpha intestinalis</i>
CAC49896.1	AF027127	<i>Chlamydomonas reinhardtii</i>
AA02069.1	AF036939	<i>Chlamydomonas reinhardtii</i>
SEQ ID NO. 2313		
CAF73067.1	Y12464	<i>Sorghum bicolor</i>
CAB73068.1	Y12465	<i>Sorghum bicolor</i>
CAB62693.1	AF004947	<i>Oryza sativa</i>
RAE22219.1	AF141378	<i>Zea mays</i>
RAA83888.1	AB011967	<i>Oryza sativa</i>
BAA34675.1	AB011670	<i>Triticum aestivum</i>
BAA83689.1	AB011968	<i>Oryza sativa</i>
BAA96628.1	AF002482	<i>Oryza sativa</i>
RAA05649.1	D26502	<i>Nicotiana tabacum</i>
RA023582.1	AF128443	<i>Glycine max</i>
CAE71144.1	Y10036	<i>Cucumis sativus</i>
AB57898.1	X82548	<i>Hordeum vulgare</i>
CAC99329.1	AF062479	<i>Oryza sativa</i>
CAB65244.1	X95997	<i>Solanum tuberosum</i>
SEQ ID NO. 2303		
AB050571.1	U63784	<i>Catharanthus roseus</i>
CAB65911.1	AZ249831	<i>Lemna minor</i>
RAF18999.1	AF122155	<i>Allium cepa</i>
CAC26855.1	AF069951	<i>Enteromorpha intestinalis</i>
CAC49896.1	AF027127	<i>Chlamydomonas reinhardtii</i>
AA02069.1	AF036939	<i>Chlamydomonas reinhardtii</i>
SEQ ID NO. 2313		
CAF73067.1	Y12464	<i>Sorghum bicolor</i>
CAB73068.1	Y12465	<i>Sorghum bicolor</i>
CAB62693.1	AF004947	<i>Oryza sativa</i>
RAE22219.1	AF141378	<i>Zea mays</i>
RAA83888.1	AB011967	<i>Oryza sativa</i>
BAA34675.1	AB011670	<i>Triticum aestivum</i>
BAA83689.1	AB011968	<i>Oryza sativa</i>
BAA96628.1	AF002482	<i>Oryza sativa</i>
RAA05649.1	D26502	<i>Nicotiana tabacum</i>
RA023582.1	AF128443	<i>Glycine max</i>
CAE71144.1	Y10036	<i>Cucumis sativus</i>
AB57898.1	X82548	<i>Hordeum vulgare</i>
CAC99329.1	AF062479	<i>Oryza sativa</i>
CAB65244.1	X95997	<i>Solanum tuberosum</i>
SEQ ID NO. 2304		
AF035944		<i>Fragaria x ananassa</i>
RAA88537.1	AF035944	<i>Fragaria x ananassa</i>
RAA881750.1	AB017516	<i>Marchantia polymorpha</i>
RAA881751.1	AB017517	<i>Marchantia polymorpha</i>
RAA881749.1	AB017515	<i>Marchantia polymorpha</i>
RAA881748.1	AB017515	<i>Marchantia polymorpha</i>
RAA17800.1	AF090835	<i>Mesembryanthemum crystallinum</i>
RAA17815.1	D85039	<i>Zea mays</i>
RAA070706.1	U82087	<i>Tortula ruralis</i>
RAA49984.1	U92626	<i>Cucurbita pepo</i>
RAAC49405.1	U08140	<i>Vigna radiata</i>
CAE37157.1	X81394	<i>Oryza sativa</i>
CAE69507.1	U28376	<i>Zea mays</i>
CAE07481.1	AJ007366	<i>Zea mays</i>
RAA13232.1	D87042	<i>Zea mays</i>
RAA12338.1	D84808	<i>Zea mays</i>
RAA80693.1	AF091774	<i>Glycine max</i>
CAC52423.1	AF072908	<i>Nicotiana tabacum</i>
RAE28192.2	AF15406	<i>Solanum tuberosum</i>
RAA13440.1	D87707	<i>Ipomoea batatas</i>
CAC65500.1	X96723	<i>Medicago sativa</i>
RAA61682.1	L27484	<i>Zea mays</i>
RAA33443.1	L15390	<i>Zea mays</i>
RAA85396.1	AF000615	<i>Oryza sativa</i>
CAE05270.1	AF048691	<i>Oryza sativa</i>
CRA339336.1	X56599	<i>Daucus carota</i>
CRA357156.1	X81393	<i>Oryza sativa</i>
RAA80692.1	U69173	<i>Glycine max</i>
RAA020598.1	D13436	<i>Oryza sativa</i>
RAA046110.1	AF073166	<i>Oryza sativa</i>
CAE2164.1	AF027885	<i>Cucumis sativus</i>

AA05457.1	U55766	Oryza sativa	AA03252.1	AF022012	Lycopersicon esculentum
CRA07813.1	AV007990	Hordeum vulgare	AA03262.1	AF022022	Lycopersicon esculentum
CRA46556.1	X65606	Hordeum vulgare	AA03263.1	AF022013	Lycopersicon esculentum
CRA46554.1	X65604	Hordeum vulgare			
CRA89202.1	249233	Chlamydomonas reinhardtii	SEQ ID NO. 2315		
AA00239.1	U73938	Chlamydomonas reinhardtii	BAB19880.1	AB052887	Oryza sativa
AA068962.1	138855	Glycine max	AA012877.1	AF0205377	Chlamydomonas reinhardtii
AA021062.1	AF216527	Dunaliella tertiolecta	AA012877.1	AF0205377	Pinus taeda
AA058348.1	U29095	Triticum aestivum	BAB17626.1	AB0220199	Oryza sativa
AA00240.1	U73939	Nicotiana tabacum			
BAB13608.1	D88399	Oryza sativa	SEQ ID NO. 2316		
AA060195.1	AC084763	Oryza sativa	AA000708.1	U91857	Stylosanthes hamata
CRA399336.1	X56599	Daucus carota	AA049741.1	U89257	Lycopersicon esculentum
BAB19573.1	AB002109	Oryza sativa	BAB03248.1	AB037183	Oryza sativa
CRA06503.1	AB005373	Craterostigma plantagineum	BAB03248.1	AB016265	Nicotiana sylvestris
BAB13440.1	D87707	Ipomoea batatas	BAB03248.1	U77655	Solanum tuberosum
AA068937.1	AF035944	Fragaria x ananassa	BAB03248.1	AB024575	Nicotiana tabacum
			BAB03248.1	U81157	Nicotiana tabacum
			BAB03248.1	AB016266	Nicotiana sylvestris
SEQ ID NO. 2314					
AA032146.1	AF123508	Nicotiana tabacum	SEQ ID NO. 2322		
AA032147.1	AF123509	Nicotiana tabacum	AAA33376.1	D36129	Helianthus annuus
BAB05821.1	AB026822	Cucumis sativus	AAA33376.1	D37870	Spinacia oleracea
AA032145.1	AF123507	Nicotiana tabacum	BAB040864.1	D21836	Oryza sativa
AA032144.1	AF123506	Nicotiana tabacum	BAB040864.1	D26547	Oryza sativa
CRA48297.1	X68215	Pisum sativum	AAA51522.1	U92541	Oryza sativa
AA032142.1	AF123504	Nicotiana tabacum	AAA51522.1	D85751	Oryza sativa
AA05822.1	AB026823	Cucumis sativus	BAB36283.1	AB009592	Oryza sativa
CRA48298.1	X68216	Pisum sativum	BAB37092.1	AB009592	Oryza sativa
AA032143.1	AF123505	Nicotiana tabacum	CRA06835.1	AA006055	Zea mays
AA032143.1	AF123505	Nicotiana tabacum			
AA032158.1	AF022018	Lycopersicon esculentum	SEQ ID NO. 2326		
BAB5820.1	AB026821	Lycopersicon esculentum	AAA83439.1	U16123	Zea mays
CRA48300.1	X68218	Cucumis sativus	AAA50305.1	D29099	Solanum tuberosum
AA03261.1	AF022021	Pisum sativum	BAB48484.1	U87849	Capsicum annuum
AA03255.1	AF022015	Lycopersicon esculentum	BAB48484.1	D11350	Lycopersicon esculentum
AA03257.1	AF022017	Lycopersicon esculentum	BAB48484.1	D11350	Lycopersicon esculentum
BAB48739.1	AB023482	Oryza sativa	CRA47636.1	X67163	Daucus carota
AA03259.1	AF022019	Lycopersicon esculentum			
BAB5840.1	AF020270	Oryza sativa	SEQ ID NO. 2327		
CRA61882.1	A2249996	Lycopersicon esculentum	AA027878.1	AB139466	Vigna radiata
AA03254.1	AF022014	Lycopersicon esculentum	AA034566.1	AB058796	Oryza sativa
			CRA90681.1	Z50801	Zea mays

AAA34140.1	M17633	Lycopersicon esculentum	ABR31705.1	S72356	Chloroplast Nicotiana
CRA45323.1	X64198	Nicotiana tabacum	SYLVESTRIS		
AAA34196.1	U03558	Lycopersicon esculentum	BAW07667.1	D42070	Nicotiana sylvestris
CMA41405.1	X58514	Pinus sylvestris	BAW78591.1	AU066497	Chlamydomonas sp. RS-5
CRA41404.1	X58514	Pinus sylvestris			
AAFC23819.1	AF218305	Hordeum vulgare			
AAFC67558.1	AF094776	Oriza sativa	SPQ ID NO. 2329		
CRA06961.1	AJ006296	Hordeum vulgare	CAU09891.1	AJ011939	Trifolium repens
AAAG28464.1	AF195794	Chlamydomonas reinhardtii	CRA62228.1	X90695	Medicago sativa
AAFA4702.1	AF241524	Asarina barcliana	ABR41812.1	L36158	Medicago sativa
CRA78900.1	L16408	Pinus sylvestris	BAW77387.1	Y10469	Spinacia oleracea
AA64414.1	U23188	Zea mays	CRA62226.1	X90693	Scutellaria baicalensis
CRA44777.1	X63052	Hordeum vulgare	CAB94692.1	AJ242742	Ipomoea batatas
CRA65042.1	X95727	Brassica juncea	AAFC3024.1	AF244921	Spinacia oleracea
AA66415.1	U23129	Zea mays	CRA62227.1	X90694	Medicago sativa
CRA43590.1	X61287	Lycopersicon esculentum	ADU11483.1	U51193	Glycine max
AA501172.1	U01964	Glycine max	CRA49818.1	AF014467	Oriza sativa
CRA34459.1	X16436	Sinapis alba	CMA46916.1	X66125	Oriza sativa
AAU27877.1	AF139465	Vigna radiata	CRC21389.1	AJ041276	Zea mays
CRA33903.1	X15894	Sinapis alba	CAB67121.1	Y13023	Lycopersicon esculentum
AAU25390.1	AB012637	Nicotiana sylvestris	ABR41811.1	L36157	Medicago sativa
BRU0536.1	D00641	Oriza sativa	CRA50597.1	X71593	Lycopersicon esculentum
CRA99993.1	Z75663	Apium graveolens	ACR98519.1	AF007211	Glycine max
CRA39883.1	X56538	Pisum sativum	CRA62225.1	X90692	Medicago sativa
AAFC79711.1	AF093617	Acetabularia acetabulum	CRA66037.1	X97351	Populus balsamifera subsp.
CRA32109.1	X13909	Oriza sativa	trichocarpa		
CRA32108.1	X13908	Oriza sativa	AAU20473.1	U12315	Cenchrus ciliaris
AA668425.1	M34396	Polystichum munium	AAU98491.1	L36981	Petroselinum crispum
AAU0594.1	U21114	Solanum tuberosum	CRA71488.1	Y10462	Spinacia oleracea
BRU77273.1	AB026686	Physcomitrella patens	CRA71490.1	Y10464	Spinacia oleracea
CRA10284.1	AJ7131044	Cicer arietinum	BAU03911.1	D16442	Oriza sativa
AAFC9207.1	AF279250	Vigna radiata	BAU07663.1	D42064	Nicotiana tabacum
CRA49149.1	X69215	Pisum sativum	AAU9821.1	AF014470	Oriza sativa
BRU32346.1	AB013728	Cryptomeria japonica	CRA80502.1	Z22920	Spirodela polytricha
CRA43804.1	X61610	Brassica napus	ADU11484.1	U51194	Glycine max
AAU70556.1	AF017998	Tetraselmis sp. RG-15	BAU1950.1	D11337	Phaseolus vulgaris
			BAU07664.1	X85228	Vigna angularis
			BAU07664.1	D42065	Triticum aestivum
			AAU37427.1	AF149277	Nicotiana tabacum
			CRA39486.1	X56011	Phaseolus vulgaris
					Triticum aestivum

SPQ ID NO. 2328

ABR31704.1 S72356

sylvestris

BEAL12715.1	D85039	Zea mays	CAR55516.1	X78900	Beta vulgaris
AAA61662.1	L27484	Zea mays	CAR5541.1	X97666	Pisum sativum
CAA57157.1	X61394	Oryza sativa	AAC21562.1	AF068260	Ipomoea batatas
AAA69507.1	U28376	Zea mays	CAB52196.1	AD252316	Ipomoea batatas
AAZ08192.2	AF115406	Solanum tuberosum	CAB79980.1	Z21969	Triticum aestivum
BAAL3440.1	D87707	Ipomoea batatas	CAA34390.1	X61187	Solanum tuberosum
CAA39393.1	X56599	Daucus carota	CAAK27719.1	AF356003	Cicer arietinum
BAAG4168.1	AC073166	Oryza sativa	CAB54595.1	AD249256	Ipomoea batatas
BAAG2690.1	DI3436	Oryza sativa	AAAB91468.1	AF032473	Citrullus lanatus
AAE08537.1	AF027885	Cucumis sativus	CAA47626.1	X67151	Hordeum vulgare
AAE21664.1	AF035944	Fraxinus x ananassa	BAAC23490.1	D50317	Oryza sativa
AAE21662.1	AF027885	Dunaliella tertiolecta	RAC49493.1	U95497	Lycopersicon esculentum
CAH09202.1	Z49233	Chlamydomonas eugametos	RAC49729.1	U66876	Hordeum vulgare
AAE23900.1	AF194413	Oryza sativa	CAB55496.1	AD249257	Ipomoea batatas
AAE23901.2	AF194414	Oryza sativa	CAA32633.1	X14350	Triticum aestivum
AAE78558.1	AF030879	Solanum tuberosum	CAAK27727.1	AF028314	Oryza sativa
AAE32116.1	AF051211	Picea mariana	CAAK27685.1	AF347698	Brassica rapa subsp. pekinensis
CAB46228.1	X18055	Arachis hypogaea	CAB6227.1	Z81111	Zea mays
CAA58750.1	X83669	Daucus carota	AAE94012.1	AF010283	Sorghum bicolor
BAAL2691.1	D84507	Zea mays	AAE24191.2	S48563	Zea mays
AAE47181.1	S82324	Zea mays	AAE38781.1	U66041	Oryza sativa
BAE22410.1	D38452	Zea mays	CAAG59978.1	Y08728	Pisum sativum
BAAL2692.1	D84508	Zea mays	CAB51610.1	AD245392	Ipomoea batatas
AAE01179.1	AF289237	Zea mays	CAB5540.1	X96765	Pisum sativum
BAAC4961.1	AF009337	Tradescantia virginiana	CAB89863.1	AD271162	Brassica napus
BAE90814.1	AF001168	Oryza sativa	CAA55539.1	X96764	Pisum sativum
AAE49008.1	U24188	Lilium longiflorum	CAA54259.1	X76940	Vicia faba
AAE52098.1	U70923	Nicotiana tabacum	CAA54260.1	X76941	Vicia faba
			CAAB01911.1	Z79635	Ipomoea batatas
			CAAB91466.1	AF032471	Citrullus lanatus
			CAAK27721.1	AF356005	Cicer arietinum
SEQ ID NO. 2337					
AD56042.1	AF184598	Citrus unshiu	SEQ ID NO. 2339		
AAE49941.1	U98089	Lycopersicon esculentum	CAE55641.1	X79008	Nicotiana tabacum
AAE91467.1	AF032472	Citrullus lanatus	CAE55642.1	X79009	Nicotiana tabacum
CAE52917.1	X74982	Solanum tuberosum	CAE5553.1	X61205	Nicotiana glauca
AAE91463.1	AF030383	Cucumis melo	CAE55738.1	X79137	Nicotiana tabacum
AAE66436.1	AF249917	Perilla frutescens	CAE5739.1	X79138	Nicotiana tabacum
AAE91464.1	AF030384	Cucumis melo	CAE5739.1	X79141	Nicotiana tabacum
AAE56405.1	AF184345	Lycopersicon hirsutum	CAE5742.1	X79141	Nicotiana tabacum
AAE40723.1	U81033	Lycopersicon esculentum	CAE5737.1	X79136	Nicotiana tabacum
AAE40724.1	U81034	Lycopersicon esculentum	CAE5737.1	X79135	Nicotiana tabacum
AAE49942.1	U85496	Lycopersicon esculentum			

495

CRAS55640.1	X79005	Nicotiana tabacum	RAA20186.1	L10633	Zea mays
CRAS55639.1	X79004	Nicotiana tabacum	CRAA49736.1	X70184	Lupinus albus
RAA62736.1	U17979	Zea mays	RAA19709.1	L10636	Zea mays
RAA67607.1	U73459	Zea mays	RAA37060.1	X52878	triticum aestivum
RAA64289.1	AF007380	Oryza sativa	RAD10492.1	U76896	Lupinus albus
RAA2152.1	D12627	Oryza sativa	RAA03267.1	U76860	Anemia phyllitidis
RAA21260.1	AB046416	Oryza sativa	RAA48929.1	X54844	Pisum sativum
CRAS5741.1	X79140	Nicotiana tabacum	CRAA38613.1	X54844	Volvox carteri
RAA21258.1	AB046414	Oryza sativa	RAA99439.1	L124547	Glycine max
RAA21259.1	AB046414	Oryza sativa	CRAA31334.1	L124547	Chlamydomonas reinhardtii
RAA19805.1	AF180356	Brassica oleracea	RAA34009.1	M21296	Chlamydomonas reinhardtii
CRAS43514.1	X61206	Nicotiana glauca	RAA33101.1	X03281	Chlamydomonas reinhardtii
CRAS5740.1	X79139	Nicotiana tabacum	RAA33101.1	M10064	Chlamydomonas reinhardtii
RAA76677.1	Y17186	Pisum sativum	RAA60936.1	AF001379	Chlamydomonas reinhardtii
RAA20980.1	AF079782	Zea mays	RAA34010.1	M21297	Glycine max
SEQ ID NO. 2342			RAA64308.1	U63927	Daucus carota
RAD10489.1	U76746	Triticum aestivum	RAA19707.1	L10635	Zea mays
RAD10490.1	U76895	Triticum aestivum	CRAS2718.1	X74654	Zea mays
AC084320		Oryza sativa	RAA33804.1	M33371	Polytomella agilis
RAA02505.1	D13224	Oryza sativa	RAA33803.1	M33371	Polytomella agilis
RAD20178.1	AF059287	Eleusine indica	RAA33892.1	M33372	Pisum sativum
CRAS3847.1	Z33382	Solanum tuberosum	CRAS38614.1	X54845	Zinnia elegans
RAD20180.1	AF059289	Eleusine indica	RAA92639.1	D63138	Pisum sativum
RAA06381.1	D30716	Oryza sativa	CRAS38615.1	X54846	
RAA06382.1	D30717	Oryza sativa	SEQ ID NO. 2345		
RAA19708.1	L10634	Zea mays	RAA21926.1	AB006604	Petunia x hybrida
CRAS5022.1	X78143	Oryza sativa	RAA21924.1	AB006602	Petunia x hybrida
RAA70891.1	Y09741	Hordeum vulgare	RAA19112.1	AB000453	Petunia x hybrida
CRAS67056.1	X98406	Cicer arietinum	SEQ ID NO. 2346		
RAD10487.1	U76744	Triticum aestivum	RAA19619.1	AF336286	Gossypium hirsutum
CRAS55912.1	X79367	Oryza sativa	CRAS46414.1	X95296	Lycopersicon esculentum
CRAS3853.1	Z33402	Solanum tuberosum	CRAS50224.1	X70879	Hordeum vulgare
RAA282637.1	D63136	Zinnia elegans	CRAS50224.1	X70877	Hordeum vulgare
RAD20181.1	AF059290	Eleusine indica	CRAS50221.1	X70876	Hordeum vulgare
RAA282638.1	D63137	Eleusine indica	RAA23337.1	D88617	Oryza sativa
RAD10488.1	U76745	Triticum aestivum	RAA23338.1	D88618	Oryza sativa
RAD20179.1	AF059288	Eleusine indica	CRAS72218.1	X11415	Oryza sativa
CRAS52720.1	X74656	Zea mays	CRAS50225.1	X70880	Hordeum vulgare
CRAS52719.1	X74655	Zea mays	CRAT8386.1	Z13996	Petunia x hybrida
CRAS37061.1	X52879	Zea mays			

[illegible]

AAK09326.1	AF320613	Zea mays	BAA76387.1	D67038	Pyrus pyrifolia
SEQ ID NO. 2375			CMA67216.1	X98827	Malus x domestica
AAAF1424.1	AF110228	Spinacia oleracea	CMA68336.1	Y00478	Lycopersicon esculentum
AAAF1424.1	AF110226	Nicotiana tabacum	AAAB3644.1	W98357	Pisum sativum
AAAF1424.1	AF110229	Spinacia oleracea	CMA71140.1	Y10034	Rumex palustris
AAAF1424.1	AF110230	Spinacia oleracea	AAAG9799.1	U54566	Nicotiana glutinosa
SEQ ID NO. 2379			CMA60576.1	X87097	Pyrus communis
AAAF5785.1	X81629	Brassica oleracea	ABAB7142.1	L29405	Helianthus annuus
AAA32981.1	L27664	Brassica napus	AAC48922.1	U06047	Vigna radiata
AAAF5784.1	X81628	Brassica oleracea	CMA67119.1	X98493	Nicotiana tabacum
AAAF5742.1	AF252628	Brassica juncea	CMA58233.1	X83229	Nicotiana tabacum
AAAC98808.1	U68215	Carica papaya	SEQ ID NO. 2381		Brassica napus
AAAC33697.1	L21978	Petunia x hybrida	AAAF98390.1	AF287143	Citrus unshiu
AAAF64528.1	AF254125	Carica papaya	AB033758	AB033758	Petunia x hybrida
AAAF70883.1	U19856	Pelargonium x hortorum	AAAB9009.1	AB027455	Nicotiana tabacum
AAAF21541.1	AB003514	Actinidia deliciosa	AAAF61647.1	AF190634	Perrilla frutescens
AAAC48977.1	U07953	Pelargonium x hortorum	AAAB36423.1	AB013596	Verbena x hybrida
AAAF1738.1	Y10749	Betula pendula	AAAB59054.1	L34847	Zea mays
AAAC37381.1	L21976	Petunia x hybrida	AAAB36422.1	AB013597	Perrilla frutescens
AAAF6466.1	Z46349	Nicotiana tabacum	AAAF1077.1	AF194453	Sorghum bicolor
AAAF94601.1	AB033504	Populus euramericana	AAAB36552.1	U32643	Nicotiana tabacum
AAAF34924.1	AB013101	Lycopersicon esculentum	AAAC28304.1	AF346432	Nicotiana tabacum
AAAF3466.1	AB012857	Nicotiana tabacum	AAAB36553.1	U32644	Nicotiana tabacum
AAAF36484.1	AF129074	Prunus persica	AAAB12737.1	D55186	Gentiana triflora
AAAF70884.1	U67861	Pelargonium x hortorum	AAAC28303.1	AF346431	Nicotiana tabacum
AAAF64799.1	X95553	Cucumis melo	AAAB33484.1	AF346431	Scutellaria baicalensis
AAAF90904.1	Z54199	Lycopersicon esculentum	AAAB19659.1	AB002818	Perrilla frutescens
AAAF1212.1	X58273	Lycopersicon esculentum	AAAD21086.1	AF127218	Forsythia x intermedia
AAAC33698.1	L21979	Petunia x hybrida	CMA59450.1	X85138	Lycopersicon esculentum
AAAF04895.1	AJ001646	Malus x domestica	CMA56231.1	Y118871	Dorotheanthus bellidifolius
AAAF2646.1	Z29529	Nicotiana tabacum	AAAB48444.1	U92367	Solanum tuberosum
AAAF54449.1	X77232	Prunus persica	AAAB41020.1	AB047093	Vitis vinifera
AAAF36483.1	AF129073	Prunus persica	AAAB41026.1	AB047099	Vitis vinifera
AAAF57233.1	AF033582	Cucumis sativus	AAAB41024.1	AB047097	Vitis vinifera
AAAF33624.1	AF026793	Prunus americana	AAAB41022.1	AB047095	Vitis vinifera
AAAF90550.1	AB031027	Prunus mume	AAAB41017.1	AB047090	Vitis labrusca x Vitis vinifera
AAAF4328.1	Y14005	Malus x domestica	AAAB41019.1	AB047092	Vitis vinifera
AAAF34661.1	AF030859	Malus x domestica	AAAB41021.1	AB047094	Vitis vinifera
AAAF97972.1	U54565	Nicotiana glutinosa	AAAB41023.1	AB047096	Vitis vinifera

BR41025.1	AE047098	<i>Vitis vinifera</i>	BR405623.1	D26574	<i>Daucus carota</i>
BR499008.1	AE027454	<i>Petunia x hybrida</i>	BR477697.1	AF145728	<i>Oryza sativa</i>
BR481683.1	AF000372	<i>Vitis vinifera</i>	RAF011764.2	AF184277	<i>Glycine max</i>
BR461682.1	AF000371	<i>Vitis vinifera</i>	BR421011.1	D26578	<i>Daucus carota</i>
BR41018.1	AE047091	<i>Vitis labrusca x Vitis vinifera</i>	RAF73482.1	AZ268422	<i>Brassica rapa subsp. pekin</i>
CR431855.1	X13500	<i>Zea mays</i>	BR433460.1	AE028072	<i>Physcomitrella patens</i>
SEQ ID NO. 2385			SEQ ID NO. 2387		
AB431704.1	S72356	Chloroplast Nicotiana	BR47745.1	AE037887	<i>Lupinus albus</i>
syvestris			BR42130.1	AE023385	<i>Lupinus albus</i>
AB431705.1	S72358	Chloroplast Nicotiana	CAA06921.1	AJ006224	<i>Ipomoea batatas</i>
syvestris			RAF19822.1	AF200826	<i>Ipomoea batatas</i>
BR407667.1	D42070	<i>Nicotiana sylvestris</i>	BR492365.1	AE039746	<i>Spirodela punctata</i>
BR478581.1	AU066497	<i>Chlamydomonas sp. HS-5</i>	CAA04644.1	AJ001270	<i>Phaseolus vulgaris</i>
SEQ ID NO. 2386			RAF19820.1	AE200824	<i>Glycine max</i>
RAF37696.1	AF145727	<i>Oryza sativa</i>	RAF19821.1	AE200825	<i>Ipomoea batatas</i>
BR493463.1	AE028075	<i>Physcomitrella patens</i>	RAF20634.1	AF126255	<i>Aschusa officinalis</i>
CAA63222.1	X92489	<i>Glycine max</i>	CAA07280.1	AJ006870	<i>Ipomoea batatas</i>
CAA64221.1	X94449	<i>Pimpinella brachycarpa</i>	BR497038.1	AE029086	<i>Tagetes patula</i>
BR431270.1	AE079890	<i>Oryza sativa</i>	BR482133.1	AE023388	<i>Lycopersicon esculentum</i>
RAF19980.1	AF211193	<i>Oryza sativa</i>	BR482131.1	AE023386	<i>Glycine max</i>
CAA65456.2	X96681	<i>Oryza sativa</i>	BR482132.1	AE023387	<i>Oryza sativa</i>
CAA64152.1	X94375	<i>Pimpinella brachycarpa</i>	SEQ ID NO. 2389		
CAA64491.1	X95193	<i>Pimpinella brachycarpa</i>	BR407395.1	D38220	<i>Brassica napus</i>
RAF37695.1	AF145726	<i>Oryza sativa</i>	BR407394.1	D38219	<i>Brassica napus</i>
RAF37700.1	AF145731	<i>Oryza sativa</i>	CAA30576.1	AF314093	<i>Ricinus communis</i>
CAA06728.1	AJ005833	<i>Craterostigma plantagineum</i>	CAA32217.1	X14059	<i>Nicotiana tabacum</i>
CAA06717.1	AJ005820	<i>Craterostigma plantagineum</i>	CAA32218.1	X14060	<i>Lycopersicon esculentum</i>
BR405622.1	D26573	<i>Daucus carota</i>	AAA33712.1	L11563	<i>Petunia x hybrida</i>
BR493462.1	AE028074	<i>Physcomitrella patens</i>	CAA32216.1	X14058	<i>Nicotiana tabacum</i>
RAF37698.1	AF145729	<i>Oryza sativa</i>	CAA56696.1	X80670	<i>Lotus japonicus</i>
BR493465.1	AE028077	<i>Physcomitrella patens</i>	RAF52786.1	U95317	<i>Solanum tuberosum</i>
BR405624.1	D26575	<i>Daucus carota</i>	RAF18985.1	U76701	<i>Solanum tuberosum</i>
BR493468.1	AE028080	<i>Physcomitrella patens</i>	AAA5940.1	U01029	<i>Phaseolus vulgaris</i>
BR405625.1	D26576	<i>Daucus carota</i>	AAA34033.1	M32600	<i>Spinacia oleracea</i>
BR493466.1	AE028078	<i>Physcomitrella patens</i>	CAA38031.1	X54097	<i>Betula pendula</i>
BR493467.1	AE028079	<i>Physcomitrella patens</i>	BR413047.1	D62226	<i>Spinacia oleracea</i>
BR493461.1	AE028073	<i>Physcomitrella patens</i>	BR433114.1	M33154	<i>Cucurbita maxima</i>
RAF01765.1	AF184278	<i>Glycine max</i>	RAF19790.1	AF055369	<i>Glycine max</i>
			CAA58909.1	X84103	<i>Cichorium intybus</i>

AAA96813.1	UL3987	Glycine max	RAAG13663.1	AF263457	Zea mays
CAR37672.1	X53603	Phaseolus vulgaris	RAAG98090.1	AF067400	Zea mays
AAA96727.1	L23854	Glycine max	BAH30816.1	AF001168	Oryza sativa
AAA62316.1	U20450	Zea mays	RAAG98091.1	AF067401	Oryza sativa
AAA96808.1	AF153448	Zea mays	SEQ ID NO. 2398		
CAR40975.1	X57844	Hordeum vulgare	BAAG1862.1	AB026295	Oryza sativa
CAR40976.1	X57845	Hordeum vulgare	BAAG1862.1	AB026295	Oryza sativa
AAA93560.1	X60173	Hordeum vulgare	RAAG9995.1	U82432	Dianthus caryophyllus
CAR42739.1	X60173	Hordeum vulgare	RAAG9995.1	U82432	Dianthus caryophyllus
AAA7595.1	AF203033	Glycine max	RAAG5680.1	AF184273	Daucus carota
AAA45497.1	X64136	Chilamydomonas reinhardtii	RAAG5681.1	AF184274	Daucus carota
RAAG4960.1	U39931	Volvox carterii	CAR50498.1	X71360	Malus sp.
RAAG4960.1	U39931	Volvox carterii	RAAG26205.1	AF117269	Malus x domestica
RAAG49459.1	U39930	Chlorella vulgaris	RAAG26205.1	AF117269	Malus x domestica
RAAG49459.1	U39930	Chlorella vulgaris	RAAG2287.1	AF026058	Mathiola incana
CAR29497.1	X06134	Nicotiana tabacum	RAAG20143.1	AB003779	Perilla frutescens
AAA18377.1	U08029	Spinacia oleracea	RAAG6560.1	AF015885	Callistephus chinensis
RAAG39553.1	U64308	Agrostemma githago	RAAG21477.1	AB044091	Torenia fournieri
AAA03202.1	M27821	Zea mays	CAR53580.1	X75966	Vitis vinifera
AAA33483.1	M77792	Zea mays	RAAG75305.1	AB023786	Ipomoea batatas
RAAG39555.1	U64310	Agrostemma githago	RAAG84049.1	AF028602	Ipomoea batatas
RAAG39554.1	U64309	Agrostemma githago	RAAG75306.1	AB023787	Ipomoea batatas
CAR33819.1	X15820	Oryza sativa	CAR373094.1	Y12489	Forsythia x intermedia
CAR33817.1	X15819	Oryza sativa	CAR69252.1	Y07955	Oryza sativa
RAAG33998.1	L23853	Glycine max	SEQ ID NO. 2399		
CAR38908.1	X84102	Cichorium intybus	CHAG12822.1	R239952	Nicotiana tabacum
CAR40090.1	X36771	Chlorella vulgaris	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
CAR45776.1	X64446	Zea mays	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG17694.1	AF077372	Zea mays	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG96242.1	L40147	Avena strigosa	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG20155.1	S61885	Nicotiana glauca	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG96245.1	L40151	Hordeum pusillum	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG96247.1	L40153	Hordeum stenotachys	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
SEQ ID NO. 2390			RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG36871.1	AF239818	Zea mays	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG36870.1	AF239817	Zea mays	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG36869.1	AF239816	Zea mays	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
SEQ ID NO. 2395			RAAG3205.1	AF245119	Mesembryanthemum crystallinum
RAAG49600.1	U30304	Solanum brevidens	RAAG3205.1	AF245119	Mesembryanthemum crystallinum
SEQ ID NO. 2397			RAAG3205.1	AF245119	Mesembryanthemum crystallinum

SEQ ID NO. 2400	AAA08051.1	U27116	Populus tremuloides	SEQ ID NO. 2402	RAA81777.1	AF000364	Oryza sativa
AAA4991.1	U62735	AAA4991.1	Nicotiana tabacum	trichocarpa	CAI10217.1	AJ130841	Populus balsamifera subsp.
CAA12195.1	AJ224894	CAA12195.1	Populus balsamifera subsp.	RAA50441.1	AF168778	Eucalyptus globulus	
trichocarpa				AAU50442.1	AF168779	Eucalyptus globulus	
CAA11496.1	AJ223621	CAA11496.1	Mesembryanthemum crystallinum	AAC15067.1	AF060180	Nicotiana tabacum	
trichocarpa							
CAA08395.1	AF053553	CAA08395.1	Populus balsamifera subsp.	SEQ ID NO. 2403	Mesembryanthemum crystallinum		
CAA11496.1	AJ223621	CAA11496.1	Pinus taeda	CBA82852.1	230329	Spinacia oleracea	
CAA02050.1	AF036095	CAA02050.1	Zea mays	CAAB2991.1	230330	Oryza sativa	
CAA45149.1	AJ242980	CAA45149.1	Medicago sativa subsp. sativa	RAB03409.1	AF002816	Nicotiana tabacum	
AHC28973.1	U20736	AHC28973.1	Vitis vinifera	CAAB50374.1	X71057	Mesembryanthemum crystallinum	
CAH03669.1	254233	CAH03669.1	Nicotiana tabacum	CAAB2994.1	230333	Spinacia oleracea	
CAH05369.1	262366	CAH05369.1	Populus tomentosa	CAAB2993.1	230332	Chlamydomonas reinhardtii	
RAH44689.1	AZ240466	RAH44689.1	Oryza sativa	RAB18104.1	AB042714	Chlamydomonas reinhardtii	
RAH78733.1	AB023482	RAH78733.1	Nicotiana tabacum	RAB18105.1	AB042715	Solanum tuberosum	
AAC49916.1	U62736	AAC49916.1	Nicotiana tabacum	CAAB2476.1	X90390	Pisum sativum	
AAC49913.1	X38612	AAC49913.1	Petroselinum crispum	RAA50304.1	M92389	Lycopersicon esculentum	
CAH90894.1	254183	CAH90894.1	Nicotiana tabacum	RAH6637.1	AF143505	Oryza sativa	
AAB80931.1	AF022775	AAB80931.1	Petroselinum crispum	BAH96593.1	AF002481	Solanum berthaultii	
AAA33851.1	M69184	AAA33851.1	Petroselinum crispum	CAAB6616.1	X97980	Sorghum bicolor	
CAA83943.1	X33878	CAA83943.1	Populus balsamifera subsp.	CAAT3067.1	Y12464	Sorghum bicolor	
CAA11495.1	AJ223620	CAA11495.1	Populus balsamifera subsp.	CAAT3068.1	Y12465	Oryza sativa	
trichocarpa				RAA83689.1	AB011968	Oryza sativa	
CAA12200.1	AJ224896	CAA12200.1	Populus balsamifera subsp.	RAA83688.1	AB011967	Oryza sativa	
trichocarpa				AAB62693.1	AF004947	Oryza sativa	
CAA12199.1	AJ224895	CAA12199.1	Populus balsamifera subsp.	AAD23582.1	AF128443	Glycine max	
CBA45150.1	AJ242981	CBA45150.1	Zea mays	AAF22219.1	AF141378	Zea mays	
CAH49914.1	U62734	CAH49914.1	Nicotiana tabacum	BAH05649.1	D26602	Nicotiana tabacum	
CAH2911.1	Y12228	CAH2911.1	Eucalyptus gunnii	CAAT1142.1	Y10036	Cucumis sativus	
AAK16714.1	AF327458	AAK16714.1	Populus alba x Populus glandulosa	CAAB2992.1	230331	Mesembryanthemum crystallinum	
glandulosa							
AAH59389.1	U13151	AAH59389.1	Zinnia elegans	SEQ ID NO. 2403	Catharanthus roseus		
AAH50443.1	AF168780	AAH50443.1	Eucalyptus globulus	CBA41474.1	AJ238402	Brassica rapa subsp. pekinensis	
CAH1228.1	256282	CAH1228.1	Nicotiana tabacum	RAG31592.1	AF029178	Triticum aestivum	
CAH26191.1	AF046122	CAH26191.1	Eucalyptus globulus	RAK31740.1	AF123609	Vicia sativa	
AAH61680.1	L22203	AAH61680.1	Stellaria longipes	AGS3645.1	AF092917	Vicia sativa	
BAH81774.1	AF000364	BAH81774.1	Oryza sativa	AAH40204.1	AF030260	Vicia sativa	
BAH88234.1	AB035144	BAH88234.1	Citrus natsudaidai	RAH94586.1	AF022457	Glycine max	
BAH19102.1	AB000408	BAH19102.1	Populus kitakamiensis	CAH03632.1	AB024931	Lotus japonicus	
				BAH76380.1	AB023636	Glycyrrhiza echinata	

BA74465.1	AB022732	Glycyrrhiza echinata	AB65161.1	AF002566	Solanum commersonii
CAR70576.1	X09424	Nepeta racemosa	CAB97332.1	AF249144	Roridula vulgaris
CAR49188.2	Q29333	Pisum sativum	CAB67969.1	X99635	Betula pendula
ABG09208.1	AF175278	Pisum sativum	CAB67967.1	X99633	Betula pendula
BAA84071.1	AB028151	Antirrhinum majus	ABG09136.1	AF150332	Physcomitrella patens
BAA89260.1	Q49263	Pisum sativum	ABG09135.1	AF150951	Physcomitrella patens
BRA22422.1	AB001379	Glycyrrhiza echinata	ABG83170.1	AF176948	Malus x domestica
BAF45358.1	AF195817	Beta vulgaris	BAA25246.1	D89671	Ceratopteris richardii
AAF34531.1	AF195810	Trifolium pratense	AAF13261.1	AF198175	Dendropteryx greg Madane
AA038929.1	AF135484	Glycine max	CAC35027.1	AF291298	Pisum sativum
AA034525.1	AF195804	Lens culinaris	CAC37031.1	AF279089	Pisum sativum
BA093634.1	AB025016	Lotus japonicus	ABD39037.1	AF068726	Nicotiana glauca
AA034530.1	AF195809	Vigna radiata	ABD08875.1	U67451	Brassica oleracea
BA084072.1	AB028152	Toronia hybrida	AA030923.1	AF306349	Eucalyptus globulus
BA094591.1	AF022462	Glycine max	AA027459.1	AF305696	Eucalyptus globulus
AA034529.1	AF195808	Vigna radiata	AA024909.1	AF305076	Eucalyptus globulus
AA034543.1	AF195819	Glycine max	AA088876.1	U67452	Brassica oleracea
AA034532.1	AF195811	Trifolium pratense	AA088876.1	U67452	Brassica oleracea
AA034542.1	AF195818	Glycine max	AA039036.1	AF068725	Nicotiana glauca
AA034526.1	AF195807	Vigna radiata	CA067968.1	X99654	Betula pendula
AA034527.1	AF195806	Vigna radiata	AA020329.1	AF109403	Sinapis alba
SEQ ID NO. 2404			SEQ ID NO. 2405		
AA099919.1	AF112149	Zea mays	AA034803.1	AF243368	Glycine max
AA051377.1	U91964	Medicago sativa	AA064430.1	AF239928	Euphorbia esula
BA094342.1	AB041020	Oryza sativa	AA034798.1	AF243363	Glycine max
CA096997.2	AF139664	Oryza sativa	AA034801.1	AF243366	Glycine max
AA049146	AF249146	Hordeum vulgare	AA034797.1	AF243362	Glycine max
AA010625.1	AF035378	Lolium temulentum	AA034796.1	AF243361	Glycine max
AA043200.1	AF112150	Zea mays	AA034807.1	AF243372	Glycine max
BA033457.1	AB007504	Trifolium aestivum	AA034804.1	AF243369	Glycine max
AA000081.1	L46400	Zea mays	AA034810.1	AF243375	Glycine max
AA010626.1	AF035379	Lolium temulentum	AA034809.1	AF243374	Glycine max
AA019047.1	AF058697	Oryza sativa	AA034805.1	AF243370	Glycine max
BA019883.1	AB003325	Oryza sativa	AA018566.1	AF048978	Glycine max
AA019721.1	AF176782	Patunia x hybrida	AA034808.1	AF243373	Glycine max
AA019048.1	AF058698	Oryza sativa	AA034800.1	AF243365	Glycine max
AA029035.1	AF068724	Nicotiana glauca	AA034829.1	AF244686	Zea mays
AA014321.1	AA000759	Malus x domestica	AA034802.1	AF243367	Glycine max
AA049742.1	AA001458	Zea mays	CA09187.1	AF010448	Alopecurus myosuroides
CA056600.1	AA011675	Oryza sativa	CA09188.1	AA010449	Alopecurus myosuroides

AAG34849.1	AF244706	Zea mays	BAA88981.1	AB025778	Citrus unshiu
AAG34844.1	AF244701	Zea mays	CAA49428.1	A69773	Vicia faba
AAG34806.1	AF243371	Glycine max	CAB38022.1	AJ132000	Craterostigma plantagineum
CAA71784.1	J10820	Glycine max	CAO09593.1	AJ011319	Lycopersicon esculentum
AAA68430.1	J03679	Solanum tuberosum	CAO09910.1	AJ012080	Pisum sativum
CAA04391.1	AJ000923	Carica papaya	CAAG5639.1	X96938	Tulipa gesneriana
AAG34836.1	AF244688	Zea mays	CAAG5640.1	X96939	Tulipa gesneriana
AAG34831.1	AF244704	Zea mays	CAC40794.1	AJ131943	Medicago truncatula
AAG34847.1	AF244704	Zea mays	CAC17867.1	AF049487	Medicago sativa
PIG32118.1	AF051214	Picea mariana	CAAC39323.1	AF103231	Glycine max
APG29773.1	AF159229	Gossypium hirsutum	CAAC76057.1	Y16091	Daucus carota
AAG41204.1	AF321437	Suaeda maritima	BAA89049.1	AB029401	Citrus unshiu
CAC24549.1	AJ296343	Cichorium intybus x Cichorium endivia	CAA63122.1	X92378	Alnus glutinosa
			CAA76056.1	Y16090	Daucus carota
			CAA53081.1	X75332	Daucus carota
SEQ ID NO. 2407			CAC28107.1	AF079851	Pisum sativum
AAG43503.1	AF210049	Petunia x hybrida	CAB40795.1	AJ131964	Medicago truncatula
AAAL1560.1	AF060369	Lavatera thuringiaca	CAA34196.1	L19762	Lycopersicon esculentum
			BAA01108.1	D10266	Vigna radiata
SEQ ID NO. 2409			BAA88905.1	AB022082	Citrus unshiu
BAB20583.1	AB042270	Zea mays	CAA09681.1	AJ011535	Lycopersicon esculentum
AAK13126.1	AC083945	Oryza sativa	AAJ97571.1	U24087	Solanum tuberosum
CAC09578.1	AJ298990	Fagus sylvatica	AAJ28641.1	U73586	Gossypium hirsutum
AAA85479.1	U41103	Lycopersicon esculentum	AAJ97572.1	U24088	Solanum tuberosum
AAB39386.1	U47279	Lycopersicon esculentum	CAA04512.1	AJ001071	Pisum sativum
AAB397160.1	AF022727	Nicotiana tabacum	BAB20799.1	AB045710	Pyrus pyrifolia
			CAA57881.1	X82504	Chenopodium rubrum
SEQ ID NO. 2410			AAJ95966.1	AF263384	Saccharum officinarum
AAO01541.1	AF004810	Glycine max	CAA26229.1	X02382	Zea mays
AAO01552.1	L47607	Picea glauca	CAA26247.1	X02400	Oryza sativa
AAO09208.1	U38246	Glycine soja	CAA46017.1	X64770	Oryza sativa
AAO09209.1	U38247	Glycine soja	CAA78747.1	Z15028	Oryza sativa
			CAA04543.1	AJ001117	Triticum aestivum
SEQ ID NO. 2413			CAA46701.1	X65871	Hordeum vulgare
BAA03763.1	D16247	Nicotiana sylvestris	CAC32462.1	AJ311496	Pisum sativum
AAO0306.1	AF156667	Vigna radiata	CAA75793.1	Y15802	Hordeum vulgare
AAJ75791.1	AZ17182	Pisum sativum	BAJ33515.1	I33244	Zea mays
CAA68193.1	X39937	Spinacia oleracea	CAA11774.1	Y59046	Oryza sativa
			AAK1682.1	I03366	Oryza sativa
SEQ ID NO. 2415			CAA49551.1	X69551	Hordeum vulgare
BAA88904.1	AB022091	Citrus unshiu	CAA03955.1	AJ000153	Triticum aestivum

510

AA67737.1	L77080	Stylosanthes humilis	SEQ ID NO. 2447	RA83472.1	AB004548	Oryza sativa
CAA71496.1	Y10470	Spinacia oleracea		CAA56844.1	X80876	Oryza sativa
				AA28476.1	AF133838	Sandersonia aurantiaca
				BA83473.1	AB004819	Oryza sativa
AA71887.1	AF020791	Hordeum vulgare		AA27968.1	AF424372	Ipomoea batatas
BAR05101.1	D26105	Hordeum vulgare		CA83478.1	Z34895	Vicia sativa
BAR05102.1	D26106	Cucumis sativus		CA83521.1	U12637	Hemerocallis hybrid cultiva.
BAR2760.1	AB037113	Cucumis sativus		AA28477.1	AF133839	Sandersonia aurantiaca
BA22284.1	AB007120	Oryza sativa		BA11170.1	D76415	Oryza sativa
CA06705.1	AJ005802	Solanum tuberosum		AA20453.1	AF099203	Oryza sativa
AAK16728.1	AF329662	Chlamydomonas reinhardtii		CA83814.1	AJ131995	Carica papaya
AAK16729.1	AF329663	Polytomella sp. 'Pringsheim		AB53012.1	AF089049	Brassica napus
198_80'				BA837233.1	U34747	Phalaenopsis sp. SM9108
AA084139.1	AF101426	Cichorium intybus	SEQ ID NO. 2454			
				CA855395.1	R1117264	Oryza sativa
				BA893021.1	AF001552	Oryza sativa
				BA892501.1	AF001383	Oryza sativa
				AA41740.1	U08285	Nicotiana tabacum
				SEQ ID NO. 2455		
				AA878216.1	AF231351	Nicotiana tabacum
				CAA67782.1	X99405	Nicotiana tabacum
				AA69317.1	AF012861	Petroselinum crispum
				CA852708.1	AJ010712	Solanum tuberosum
				CA852685.1	AJ132346	Dunaliella bioculata
				CA84994.1	AJ001772	Nicotiana tabacum
				CA858775.1	X83923	Solanum tuberosum
				CA803941.1	AJ000184	Spinacia oleracea
				CA803939.1	AJ000182	Spinacia oleracea
				CA803940.1	AJ000183	Spinacia oleracea
				BA841552.1	U18238	Medicago sativa subsp. sativa
				AA811426.1	AF097663	Mesembryanthemum crystallinum
				BA869319.1	AF012863	Solanum tuberosum
				CA852442.1	X74421	Solanum tuberosum
				BA869318.1	AJ012662	Petroselinum crispum
				BA897662.1	AB029454	Triticum aestivum
				BA897663.1	AB029455	Triticum aestivum
				CA840493.1	AJ001770	Nicotiana tabacum
				CA840492.1	AJ001769	Nicotiana tabacum
				BA897664.1	AB029456	Triticum aestivum
				SEQ ID NO. 2449		
				CA817076.1	Z99954	Phaseolus vulgaris
				BA888898.1	AB020961	Zea mays
				CA805894.1	AJ0003137	Lycopersicon esculentum
				AA48496.1	AF172856	Lycopersicon esculentum
				CA853515.1	AJ245924	Solanum tuberosum
				BA888263.1	AF019147	Zea mays
				CA817074.1	Z99952	Phaseolus vulgaris
				CA812118.1	AJ224766	Phaseolus vulgaris
				AA79915.1	U17135	Dianthus caryophyllus
				CA853377.1	X75749	Vicia sativa
				CA816317.1	Z99173	Nicotiana tabacum
				CA849455.1	U41902	Pseudotsuga menziesii
				CA87538.1	X82011	Cicer arietinum
				AA841816.1	U41947	Zeam sativum
				BA870820.2	AF019145	Zea mays
				BA88262.1	AF019146	Zea mays
				CA852396.1	AF050756	Ricinus communis
				CA809699.1	Z97023	Hordeum vulgare
				CA809697.1	Z97021	Hordeum vulgare
				AA810337.1	U94591	Hordeum vulgare

CUA52787.1	X74783	Lithospermum erythrorhizon
RA092778.1	U97683	Glycine max
AG63469.1	AF198964	Bixa orellana
RA09705.1	D63389	Cucumis sativus
SE2272	/gene="3-hydroxy-3-methylglutaryl coenzym reductase,"	Gossypium barbadense
RA047161.1		
CUA53359.1	W74799	Hevea brasiliensis
RA037432.1	I34825	Solanum tuberosum
Gossypium hirsutum		
CUA37431.1	I34827	Solanum tuberosum
RA037434.1	I34823	Solanum tuberosum
CUA37433.1	I34826	Solanum tuberosum
RA037435.1	I34828	Solanum tuberosum
CUA37436.1	I34829	Solanum tuberosum
CUA53362.1	X15901	Plastid Oryza sativa
RA08618.1	AF034947	Solanum tuberosum
RA037430.1	AF036229	Zea mays
RA046520.1	AF149116	Populus tremula x Populus tremuloides
RA077918.1	AF220202	Malus x domestica
CUA12415.1	IC225172	Solanum tuberosum
RA050012.1	AF09675	Hordeum vulgare var. distichum
RA082136.1	AF022733	Oryza sativa
CUA53359.1	AF022733	Oryza sativa
RA083711.1	AF014484	Nicotiana tabacum
RA037579.1	AF235958	Medicago sativa
CUA58117.1	X82943	Zea mays
CUA47868.1	X67599	Lycopersicon esculentum
CUA47869.1	X67600	Lycopersicon peruvianum
CUA47870.1	X67601	Lycopersicon peruvianum
RA074563.1	AF208544	Lycopersicon peruvianum
CUA07080.1	I246956	Glycine max
CUA07076.1	I246952	Glycine max
CUA39034.1	X55347	Lycopersicon peruvianum
RA083710.1	AF014483	Nicotiana tabacum
CUA53361.1	AF022690	Solanum tuberosum
RA062361.1	U68072	Lycopersicon esculentum
RA069726.1	U72145	Campotheca acuminata
CUA53748.1	U95816	Oryza sativa
RA020771.1	AB041031	Solanum tuberosum
RA069727.1	U72146	Campotheca acuminata
RA04A47596.1	AF142473	Artemisia annua
RA034169.1	M63642	Lycopersicon esculentum
CUA68966.1	U14625	Artemisia annua
CUA33358.1	M74798	Hevea brasiliensis
RA068965.1	U14624	Artemisia annua
RA080820.1	U43961	Oryza sativa
CUA3360.1	M74800	Hevea brasiliensis
CUA32821.1	I268504	Oryza sativa
AF030045		Gossypium hirsutum
RA034760		Tagetes erecta
CUA34761		Tagetes erecta
CUA38469.1	X34659	Hevea brasiliensis
CUA38467.1	X34657	Hevea brasiliensis
CUA386873.1	AF110382	Oryza sativa
RAA33040.1	LI0390	Campotheca acuminata
RA003789.1	U43711	Morus alba
RA003789.1	AF096838	Solanum tuberosum
RA0272378.1	LI04938	Lycopersicon esculentum
RA040403.1	X34658	Hevea brasiliensis
CUA38468.1		

CAA87077.1	Z46953	Glycine max	SEQ ID NO. 2474	Zea mays
CAA09301.1	AJ010644	Pisum sativum	AA833663.1	Pisum sativum
CAA87079.1	Z46955	Glycine max	BA839155.1	Oryza sativa
CAA87075.1	Z46951	Pisum sativum	BA830816.1	Zea mays
CAA09300.1	AJ010643	Pisum sativum	AA838090.1	Pisum sativum
			BA839156.1	Oryza sativa
			AA838091.1	
SEQ ID NO. 2463				
CAA50218.1	X70868	Cucurbita sp.	SEQ ID NO. 2475	Pisum sativum
CAA50217.1	X70867	Cucurbita sp.	CAA83655.1	Solanum tuberosum
CAA78100.1	Z12114	Zea mays	AA802720.1	
AA833450.1	Z12107	Zea mays		
AA833452.1	Z12106	Zea mays	SEQ ID NO. 2479	Oryza sativa
AA833451.1	Z12108	Zea mays	AA897366.1	
CAA77645.1	Z11546	Zea mays		
CAA78101.1	Z12115	Zea mays		
CAA81689.1	Z27165	Brassica napus		
AA839827.1	U46136	Solanum tuberosum	SEQ ID NO. 2485	Cucumis sativus
BA832724.1	AJ001389	Oryza sativa	BA821089.1	Pisum sativum
AA865165.1	U21139	Chloroplast Pisum sativum	CAA44786.1	Pisum sativum
AA832980.1	M35600	Brassica napus	AA870949.1	Daucus carota
AA832979.1	M35599	Brassica napus	AA869208.1	Vigna radiata
CAA93139.1	Z68903	Secale cereale	AA80560.2	Pinus mugo
CAA81736.1	Z27222	Brassica napus	AA84042.1	Triticum aestivum
AA868501.1	AF030515	Canavalia lineata	BA831693.1	Marchantia paleacea
BA816318.1	AB049590	Avicennia marina	CAA34913.1	Avena sativa
AA839828.1	U46137	Solanum tuberosum	AA867734.1	Lycopersicon esculentum
CAA89836.1	Z49766	Pseudotsuga menziesii	AA862475.1	Pinus strobus
		Glycine max	AA804951.1	Chlamydomonas reinhardtii
			AA820020.1	Chloroplast Vigna radiata
			AA82471.1	Lycopersicon esculentum
			AA850561.2	Pinus mugo
			AA82474.1	Lycopersicon esculentum
			AA86728.1	Pinus taeda
			AA82473.1	Lycopersicon esculentum
			AA82472.1	Lycopersicon esculentum
			AA867733.1	Pinus strobus
			AA876100.1	Oryza sativa
			AA805205.1	Medicago truncatula
			AA805206.1	Medicago truncatula
			BA85744.1	Cucumis sativus
SEQ ID NO. 2467				
BA85440.1	AF000616	Oryza sativa		
CAA53493.1	AJ245900	Oryza sativa		
SEQ ID NO. 2468				
AA822518.1	AF001136	Pinus radiata		
BA833205.1	AB001887	Oryza sativa		
AA835496.1	AF026590	Raphanus sativus		
BA833204.1	AB001886	Oryza sativa		
BA833200.1	AB001882	Oryza sativa		
BA833206.1	AB001888	Oryza sativa		
BA833202.1	AB001884	Oryza sativa		

RAG32460.1	AF308589	Caractopteris richardii	CAB08441.1	295153	Helianthus annuus
RAY2183.1	Y11348	Medicago sativa	CAB42222.1	X59701	Helianthus annuus
RAG32467.1	AF308588	Caractopteris richardii	BA033062.1	AB017273	Cuscuta japonica
CA060492.1	AC005347	Cicer arietinum	BA03310.1	U46544	Helianthus annuus
AA073894.1	L41393	Malus x domestica	AA034133.1	AF161179	Malus x domestica
			AA033671.1	X33900	Pisum sativum
SEQ ID NO. 2557			AA072109.1	AF022217	Brassica rapa
AA079430.1	AF067961	Malus x domestica	AB063311.1	U46545	Helianthus annuus
AA071765.1	AF184278	Glycine max	CR041546.1	X58710	Medicago sativa
AA037698.1	AF145729	Oryza sativa	AD049336.1	AF166277	Nicotiana tabacum
AD037695.1	AF145726	Oryza sativa	AD039360.1	U63631	Fragaria x ananassa
BA093466.1	AF028078	Physcomitrella patens	AA061532.1	X53852	Daucus carota
AA064491.1	X58193	Pimpinella brachycarpa	CA061532.1	U08601	Papaver somniferum
CA064152.1	X94375	Pimpinella brachycarpa	CAB63903.1	X94193	Pennisetum glaucum
BA093467.1	AB028079	Physcomitrella patens	CA037864.1	X53870	Chenopodium rubrum
RA031270.1	AC079890	Oryza sativa	CAB63910.1	AJ000691	Quercus suber
RA079980.1	AF211193	Oryza sativa	AA033310.1	M80939	Oryza sativa
CA06728.1	AJ005833	Craterostigma plantagineum	CA089808.1	AJ009880	Castanea sativa
CA065456.2	X36681	Oryza sativa	AA033309.1	M80938	Oryza sativa
BA005625.1	D26576	Daucus carota	CA043210.1	X60820	Oryza sativa
BA093462.1	AB028074	Physcomitrella patens	AC078392.1	U93669	Oryza sativa
AD037700.1	AF145731	Oryza sativa	CA063902.1	X34192	Pennisetum glaucum
CAB67118.1	Y17306	Lycopersicon esculentum	BA02160.1	D12635	Oryza sativa
BA093464.1	AB028076	Physcomitrella patens	CA063901.1	X94191	Pennisetum glaucum
AA021017.1	D26578	Daucus carota	CA046641.1	X65725	Zea mays
BA044221.1	X94449	Pimpinella brachycarpa	BA039856.1	U91385	Oryza sativa
BA033463.1	AB028075	Physcomitrella patens	CA063570.1	X92983	Pseudotsuga menziesii
			CA078394.1	U93671	Oryza sativa
SEQ ID NO. 2558			CA063571.1	X92984	Pseudotsuga menziesii
AB033893.1	M11318	Glycine max	CA078393.1	U93670	Oryza sativa
CA041547.1	X58711	Medicago sativa	CA031785.1	X13431	Triticum aestivum
AD030454.1	AF123257	Lycopersicon esculentum	SEQ ID NO. 2559		
CA025578.1	X01104	Glycine max	AF149277	AF149277	Phaseolus vulgaris
AA033975.1	M11395	Glycine max	BA049462.1	AB042103	Asparagus officinalis
AD030452.1	AF123255	Lycopersicon esculentum	BA077388.1	AB024438	Scutellaria baicalensis
CA033672.1	M33899	Pisum sativum	BA092500.1	AF001383	Oryza sativa
CA033603.1	X56138	Lycopersicon esculentum	CA066037.1	X97351	Populus balsamifera subsp.
AD030453.1	AF123256	Lycopersicon esculentum	trichocarpa		
AA033974.1	M11317	Glycine max	BA027752	AB027752	Nicotiana tabacum
CA037847.1	X53851	Daucus carota	BA02306.1	BA02306.1	Oryza sativa
CA055634.2	A0237596	Helianthus annuus	BA02497.1	AF001383	

BA92422.1	AF001366	Oryza sativa	CBA62597.1	X91172	Raphanus sativus
ARG9819.1	AF007211	Glycine max	CBA71492.1	Y10466	Spinacia oleracea
BA111853.1	D93225	Populus nigra			
CBA62227.1	X90694	Medicago sativa	SEQ ID NO. 2560		
AF44924	D32424	Spinacia oleracea	BA03763.1	D16247	Nicotiana sylvestris
AF63027.1	AF244924	Oryza sativa	AA75791.1	AF21892	Pisum sativum
AC49819.1	AF014468	Medicago sativa	AA740306.1	AF156667	Vigna radiata
CBA62226.1	X90693	Spinacia oleracea	CA068193.1	X99937	Spinacia oleracea
AA63025.1	AF244922	Spinacia oleracea	CA020980.1	AF079782	Zea mays
BA77389.1	AB024439	Scutellaria baicalensis	AA848184.1	AB042644	Oryza sativa
AA48184.1	L24120	Linum usitatissimum	BA95705.1	AB042643	Oryza sativa
CBA62615.1	X91232	Mercurialis annua			
AA06183.1	M37636	Arachis hypogaea	SEQ ID NO. 2561		
AD43561.1	AF151124	Gossypium hirsutum	RAF36491.1	AF129479	Hordeum vulgare
BA002554.1	L37790	Stylosanthes humilis	PAB32442.1	AB055629	Phragmites australis
CBA94592.1	AJ242742	Ipomoea batatas	PAB32445.1	AB055632	Phragmites australis
AF63026.1	AF244923	Spinacia oleracea	PAB32443.1	AB055630	Phragmites australis
CBA40796.1	X57564	Amoracia rusticana	PAB32444.1	AB055631	Phragmites australis
CBA71491.1	Y10465	Spinacia oleracea	RAF36497.1	AF129485	Oryza sativa
CBA65334.1	AJ250421	Picea abies	RAF36496.1	AF129484	Hordeum vulgare
CBA59487.1	X95230	Triticum aestivum	CAC15063.1	AF300161	Hordeum vulgare
AA34050.1	W4103	Nicotiana sylvestris	AA756492.1	AF129480	Hordeum vulgare
AC49821.1	AF014470	Oryza sativa			
BA03911.1	D16442	Oryza sativa	SEQ ID NO. 2564		
CBA66034.1	X97348	Populus balsamifera subsp.	BA92965.1	AF001551	Oryza sativa
trichocarpa					
D30653		Populus kitakamiensis	SEQ ID NO. 2569		
BA06335.1		Glycine max	AA021872.1	AF078082	Phaseolus vulgaris
AA97734.1	AF014502	Spinacia oleracea	AA023542.1	U20948	Ipomoea trifida
CBA71493.1	Y10467	Medicago sativa	CA073134.1	Y12531	Brassica oleracea
AA041810.1	L36156	Striga asiatica	CBA41879.1	Y18260	Brassica oleracea
AA97853.1	AF043234	Oryza sativa	CA074661.1	Y14285	Brassica oleracea
BA92967.1	AF001551	Linum usitatissimum	CBA41878.1	Y18259	Brassica oleracea
AA047602.1	L07554	Populus kitakamiensis	AA03834.1	U82481	Zea mays
BA06334.1	D30652	Populus kitakamiensis	CA073133.1	Y12530	Brassica oleracea
AC49818.1	AF014467	Oryza sativa	CA073145.1	X98520	Brassica oleracea
BA111852.1	D93224	Populus nigra	AA033000.1	M76647	Brassica oleracea
CBA66035.1	X97349	Populus balsamifera subsp.	CA074662.1	Y14286	Brassica oleracea
trichocarpa			BA023876.1	AB000970	Brassica rapa
X90692		Medicago sativa	BA929336.1	AB032473	Brassica oleracea
CBA62225.1		Amoracia rusticana			
BA14144.1	D90116	Populus kitakamiensis	AA0245479		Brassica napus subsp. napus
BA07244.1	D38051	Populus nigra			
CBA46916.1	X66125	Oryza sativa			

RAA33008.1	M97667	Brassica napus	BA92500.1	AP001383	Oryza sativa
RAA79935.1	Z18921	Brassica oleracea	CA462298.1	X30895	Medicago sativa
RAA21132.1	D81193	Brassica rapa	CA462776.1	X37564	Amoracia rusticana
RAA62232.1	U00443	Brassica napus	AA43661.1	AE155124	Gossypium hirsutum
RAA06285.1	D30049	Brassica rapa	CA462615.1	X91232	Mercurialis annua
RAA92837.1	D302474	Brassica oleracea	AA65637.1	L13654	Lycopersicon esculentum
RAA07576.1	D38563	Brassica rapa	EA414143.1	D90115	Amoracia rusticana
RAA07577.2	D38564	Brassica rapa	AA618377.1	D11102	Populus kitakamiensis
RAA31001.1	D38546	Brassica rapa	AA618377.1	AE244922	Spinacia oleracea
RAA25097.1	AF088885	Brassica rapa	CA464592.1	AJ242742	Ipomoea batatas
AAK21965.1	AJ028699	Nicotiana tabacum	RAA76374.2	Y16776	Spinacia oleracea
AAA33915.1	L27821	Oryza sativa	ABA47602.1	L07554	Linum usitatissimum
RAA94509.1	AE041503	Populus nigra	AA957734.1	AF014502	Glycine max
CA851836.1	AJ243961	Oryza sativa	AA63026.1	AF244923	Spinacia oleracea
RAA61628.1	AJ007545	Brassica napus	CA865334.1	AJ250121	Picea abies
RAA94510.1	AB041504	Populus nigra	AA65636.1	L13653	Lycopersicon esculentum
AA603090.1	AC073405	Oryza sativa	CA866037.1	X97351	Populus balsamifera subsp.
			trichocarpa		
			EA411953.1	D83225	Populus nigra
			EA411950.1	D11337	Vigna angularis
			CA880302.1	Z22920	Spirodelia polyrrhiza
			AA988494.1	L136861	Petroselinum crispum
			CA866034.1	X97348	Populus balsamifera subsp.
			trichocarpa		
			CA821194.1	AJ401274	Zea mays
			CA871490.1	Y10464	Spinacia oleracea
			SEQ ID NO. 2575		
			RAA71487.1	AF049347	Berberis stolonifera
			RAA20352.1	S65550	Eschscholzia californica
			CA839358.1	AF005655	Eschscholzia californica
			CA861839.1	AF025430	Papaver somniferum
			SEQ ID NO. 2577		
			RAA76896.1	AE022687	Lycopersicon esculentum
			RAA75717.1	AF250047	Zea mays
			RAA76895.1	AE022686	Lycopersicon esculentum
			SEQ ID NO. 2578		
			RAA21872.1	AF078082	Phaseolus vulgaris
			RAA93834.1	U02481	Zea mays

RAK31799.1	AX029190	Lilium longiflorum	DBA06059.1	AB014456	Fyrus pyrifolia
RAA34173.1	M60166	Lycopersicon esculentum	AA049826.1	AF000975	Medicago sativa
CA029435.1	AX010523	Vicia faba	AA058189.1	AF154917	Ocimum basilicum
AA058344.1	AF175745	Lycopersicon esculentum	AAA18532.1	L14063	Zea mays
AA055399.1	AF179442	Lycopersicon esculentum	AA049828.1	U91225	Medicago sativa
CA059800.1	X85805	Zea mays	AA049927.1	AF000976	Medicago sativa
CA054046.1	X76536	Solanum tuberosum	AA038190.1	AF154918	Medicago sativa
AAA34052.1	M72888	Nicotiana glauca	AA029842.1	AF064694	Thalictrum tuberosum
CA063790.1	X93592	Dunaliella bioculata	AA029844.1	AF064696	Thalictrum tuberosum
AA049042.1	U54690	Dunaliella acidophila	AA029841.1	AF064693	Thalictrum tuberosum
CA059799.1	X85804	Phaseolus vulgaris	AA049856.1	U69554	Pisum sativum
BA090510.2	AF001111	Oryza sativa	AA043022.1	AF123136	Capsicum annuum
AAA34138.1	M96324	Lycopersicon esculentum	CA052461.1	X74452	Nicotiana glauca
AA011617.1	AF050495	Lycopersicon esculentum	AA029845.1	AF064697	Thalictrum tuberosum
CA052107.1	X73901	Dunaliella bioculata	CA052462.1	X74453	Nicotiana glauca
AA011618.1	AF050496	Lycopersicon esculentum	BA008559.1	D49711	Populus tremuloides
AA021896.1	AF145478	Masembryanthemum crystallinum	BA061731.1	U91371	Populus tremuloides
CA028436.1	AF195029	Glycine max	CA044005.1	X62096	Populus tremuloides
CA068234.1	X93972	Brassica oleracea	AA017455.1	X93789	Capsicum annuum
BA058910.1	U92966	Oryza sativa	AA029843.1	X906495	Thalictrum tuberosum
BA034099.1	M80491	Nicotiana glauca	AA068049.1	U50522	Populus tremuloides
AA020600.1	U08984	Zea mays	AA01533.1	U86760	Clarkia breweri
AA020601.1	U08985	Zea mays	AA069551.1	X73431	Populus x generosa
AA01028.1	AF289025	Cucumis sativus	AA063200.1	AF237777	Populus tomentosa
SEQ ID NO. 2581			BA08558.1	D49710	Populus kitakamiensis
AA070507.1	AF259801	Lycopersicon esculentum	AA071141.1	X74814	Eucalyptus gunnii
AA027714.1	AF076954	Zea mays	CA054616.1	AF006009	Clarkia breweri
CA078262.1	Z12616	Triticum aestivum	AA046623.1	X77467	Hordeum vulgare
AA034295.1	M95818	Triticum aestivum	AA078475.1	M63853	Medicago sativa
AA034296.1	M95819	Triticum aestivum	CA058218.1	AF081214	Capsicum chinense
AA027715.1	AF076955	Zea mays	AA068718.1	X83217	Prunus dulcis
SEQ ID NO. 2582			CA013475.1	U19911	Zinnia elegans
AA049708.1	U39301	Pinus taeda	AA010485.1	AJ231133	Saccharum officinarum
BA090904.1	U70873	Pinus radiata	AA048913.1	U76384	Triticum aestivum
AA024001.1	AF119225	Pinus radiata	AA018623.1	AF139533	Liquidambar styraciflua
BA071213.1	U20211	Pinus armandi	AA044672.1	AF010291	Lettuce perenne
BA080005.1	U29812	Coptis japonica	AA050439.1	AF239740	Vitis vinifera
BA080004.1	D29811	Coptis japonica	AA078353.1	AF168776	Eucalyptus globulus
CA01131.1	D29811	Prunus dulcis	AA03364.1	AF220491	Fragaria x ananassa
			AA00579.1	U73235	Zea mays
				U16794	Chrysosplenium americanum

RAA31849.1	AF133533	Mesembryanthemum crystallinum	CAA72186.1	Y11351	Oryza sativa
RAA31948.1	AF133532	Mesembryanthemum crystallinum	RAA86220.1	X99210	Lycopersicon esculentum
RAA12171.1	D94669	Raphanus sativus	RAA86221.1	AO28650	Nicotiana tabacum
RAA092790.1	AF275315	Lotus japonicus	CAA72217.1	Y11414	Oryza sativa
AC09245.1	AF037061	Zea mays	RAA23339.1	D98619	Oryza sativa
RAA26767.1	AF326500	Zea mays	CAA75509.1	Y15219	Oryza sativa subsp. indica
CAC01618.1	AJ251652	Medicago truncatula	CAA65525.1	X96749	Oryza sativa
RAA17284.1	AF43291	Mesembryanthemum crystallinum	ABA41101.1	U72762	Nicotiana tabacum
RAA31847.1	AF133531	Mesembryanthemum crystallinum	CAA72185.1	Y11350	Oryza sativa
SEQ ID NO. 2635			SEQ ID NO. 2642		
RAA77836.1	AB027456	Citrus unshiu	RAA41741.1	U92558	Lycopersicon esculentum
SEQ ID NO. 2636			SEQ ID NO. 2643		
RAA19619.1	AF336286	Gossypium hirsutum	RAA41742.1	U92559	Lycopersicon esculentum
CAH61614.1	X95296	Lycopersicon esculentum	RAA41741.1	U92558	Lycopersicon esculentum
CAH50224.1	X70876	Hordeum vulgare	SEQ ID NO. 2644		
CAH50222.1	X70877	Hordeum vulgare	CAA73134.1	Y12531	Brassica oleracea
RAA23337.1	D88617	Oryza sativa	CAH53834.1	U82481	Zea mays
RAA23338.1	D88618	Oryza sativa	CAH57145.1	X95260	Brassica oleracea
CAA72218.1	Y11415	Oryza sativa	CAA74661.1	Y14285	Brassica oleracea
RAA19611.1	AF336278	Gossypium hirsutum	CAA73133.1	Y12530	Brassica napus
CAA778386.1	Z13996	Petunia x hybrida	AAA62232.1	U00443	Brassica napus subsp. napus
CAA50225.1	X70880	Hordeum vulgare	CAB89179.1	AJ245479	Brassica napus
RAA19618.1	AF336285	Gossypium hirsutum	AAA33008.1	M97667	Brassica napus
RAA19616.1	AF336283	Gossypium hirsutum	RAA32836.1	AB032473	Brassica oleracea
RAA19615.1	AF336282	Gossypium hirsutum	RAA23676.1	AB000970	Brassica oleracea
RAA22256.1	AF161711	Pimpinella brachycarpa	AAC23542.1	U20948	Ipomoea trifida
RAA19617.1	AF336284	Gossypium hirsutum	AAA33000.1	M76647	Brassica oleracea
CAA778387.1	Z13997	Petunia x hybrida	RAA21132.1	D83193	Brassica rapa
CBA43399.1	AJ006292	Antirrhinum majus	RAA06285.1	D30049	Brassica rapa
RAA31732.1	AB029161	Glycine max	CAB41879.1	Y18260	Brassica oleracea
RAA31731.1	AB029160	Glycine max	RAA07577.2	D38564	Brassica rapa
RAA31730.1	AB029159	Glycine max	CAA74662.1	Y14286	Brassica oleracea
RAA388224.1	AB029152	Nicotiana tabacum	RAA21001.1	AB054061	Brassica rapa
RAA388221.1	AB028649	Nicotiana tabacum	RAA32837.1	AB032474	Brassica oleracea
RAA33500.1	M73028	Zea mays	CBA41878.1	Y18259	Brassica oleracea
RAA36774.1	AF210616	Zea mays	CAA79355.1	Z18921	Brassica oleracea
RAA81736.1	AB029165	Glycine max	RAA07576.1	D38563	Brassica rapa
RAA81733.2	AB029162	Glycine max	RAA34428.1	AF172282	Oryza sativa

[illegible]

SEQ ID NO. 2647
AAB33843.1 S77096
AA643027.1 AF323586

BB003437.1	AF002817	Oryza sativa	RAD10244.1	AF030032	Phaseolus vulgaris
BB19066.1	AF002744	Oryza sativa	RAA33705.1	M0831	Petunia x hybrida
BB40710.1	AF003038	Nicotiana tabacum	RAA16320.1	LI4071	Bryonia dioica
BB47076.1	AE210816	Oryza sativa subsp. japonica	CAAG1980.1	X98990	Biden pilosa
BB40706.1	A053095	Nicotiana tabacum	CAAG3900.1	LI8914	Oryza sativa
BB40705.1	A053094	Nicotiana tabacum	CAAG78288.1	Z12828	Oryza sativa
BB40703.1	A053092	Nicotiana tabacum	CAAG74307.1	Y13974	Zea mays
BB40702.1	A053093	Nicotiana tabacum	CAAG49583.1	U48692	Triticum aestivum
BB40704.1	A053091	Nicotiana tabacum	CAAG49582.1	U48691	Triticum aestivum
BB40707.1	A053096	Nicotiana tabacum	RAA85157.1	U20297	Solanum tuberosum
BB40701.1	A053090	Nicotiana tabacum	RAA85156.1	U20296	Solanum tuberosum
BB40700.1	A053089	Nicotiana tabacum	RAA62351.1	U20295	Solanum tuberosum
			RAA85155.1	U20294	Solanum tuberosum
			CAAG46150.1	X65016	Oryza sativa
		Brassica napus	RAD10246.1	AF030034	Phaseolus vulgaris
		Brassica juncea	RAF73157.1	AF150059	Brassica napus
		Psidium sativum	CAAG54583.1	X77397	Zea mays
		Petunia x hybrida			
		Malus x domestica			
		Lilium longiflorum	SEQ ID NO. 2654		
		Daucus carota	CAAG32120.1	AF051216	Picea mariana
		Elaeagnus guineensis	CAAG32164.1	AF051745	Picea mariana
		Prunus avium	CAAG32163.1	AF051744	Picea mariana
		Vigna radiata	CAAG32162.1	AF051743	Picea mariana
		Triticum aestivum	SEQ ID NO. 2656		
		Triticum aestivum	CAAG71494.1	Y10468	Spinacia oleracea
		Triticum aestivum	CAAG4413.1	X94943	Lycopersicon esculentum
		Triticum aestivum	CAAG32676.1	M37637	Arachis hypogaea
		Triticum aestivum	BAAG32107.1	AB027753	Nicotiana tabacum
		Triticum aestivum	BAAG37429.2	AF149279	Phaseolus vulgaris
		Triticum aestivum	BAAG67737.1	L77080	Stylosanthes humilis
		Triticum aestivum	BAAG73375.1	AF145349	Glycine max
		Vigna radiata	CAAG62226.1	X90693	Medicago sativa
		Oryza sativa	CAAG65637.1	LI3654	Lycopersicon esculentum
		Capsicum annuum	BAAG47427.1	AF149277	Phaseolus vulgaris
		Hordeum vulgare	CAAG40796.1	X57564	Armoracia rusticana
		Oryza sativa	CAAG66037.1	X97351	Populus balsamifera subsp.
		Capsicum annuum	ABAB1811.1	L36157	Medicago sativa
		Oryza sativa	CAAG42287.1	X90694	Medicago sativa
		Vigna radiata	BAAG08499.1	D49551	Oryza sativa
		Medicago sativa			
		Helianthus annuus			

[illegible]

BAA36421.1	AB013597	Perilla frutescens	BAA03439.1	D14589	Eustoma grandiflorum
BAA36422.1	AB013598	Perilla frutescens	BAF93415.1	AF315465	Pelargonium x hortorum
BBA12737.1	D85186	Gentiana triflora	BAA39452.1	AF014800	Echscholzia californica
BBA11024.1	AB047097	Vitis vinifera	CBA50648.1	X71657	Solanum melongena
BBA11026.1	AB047099	Vitis vinifera	AAC39453.1	AF014801	Echscholzia californica
BBA1020.1	AB047093	Vitis vinifera	BAA12735.1	D85184	Gentiana triflora
BBA1021.1	AB047095	Vitis vinifera	BAA05621.1	AF191772	Papaver somniferum
AA021086.1	AF127218	Forsythia x Intermedia	SEQ ID NO. 2672		
BBA1025.1	AB047098	Vitis vinifera	AAC48922.1	U06047	Vigna radiata
BBA1023.1	AB047096	Vitis vinifera	SEQ ID NO. 2673		
BBA1021.1	AB047094	Vitis vinifera	BAA39453.1	AB026495	Petunia x hybrida
BBA1019.1	AB047092	Vitis vinifera	BAA74428.1	AB010708	Gentiana triflora
BBA1018.1	AB047091	Vitis labrusca x Vitis vinifera	BAA96577.1	AF002480	Oryza sativa
AAB81683.1	AF000372	Vitis vinifera	BAA93452.1	AB026494	Gentiana triflora
AAB81682.1	AF000371	Vitis vinifera	BAA93475.1	AB029340	Perilla frutescens
BBA1017.1	AB047090	Vitis labrusca x Vitis vinifera	AAG13130.1	AF193789	Fragaria x ananassa
BBA19659.1	AB002818	Perilla frutescens	SEQ ID NO. 2674		
AAB48444.1	U82367	Solanum tuberosum	AAF19807.1	AF180356	Brassica oleracea
AAB36652.1	U32643	Nicotiana tabacum	BAA92986.1	AF000150	Oryza sativa
AAB28304.1	AF346432	Nicotiana tabacum	BAF19403.1	AF203481	Lycopersicon esculentum
AAB36653.1	U32644	Nicotiana tabacum	BAF19402.1	AF203480	Lycopersicon esculentum
AAB28303.1	AF346431	Nicotiana tabacum	BAA05618.1	D26601	Nicotiana tabacum
BA090787.1	AB038248	Ipomoea batatas	AAF23900.1	AF194413	Oryza sativa
CBA54612.1	X77462	Manihot esculenta	CAF99202.1	Z49233	Chlamydomonas eugametos
BAA99008.1	AB027454	Petunia x hybrida	BAA13440.1	D87707	Ipomoea batatas
CBA54614.1	X77464	Manihot esculenta	AAF21062.1	AF216527	Dunaliella tertiolecta
SEQ ID NO. 2669			BAA85396.1	AF000615	Oryza sativa
BAA56282.1	AF155332	Petunia x hybrida	AAC04324.1	U73937	Oryza sativa
BBA20076.1	AB012925	Torenia hybrida	CMA73067.1	Y12464	Sorghum bicolor
CA080368.1	Z22545	Petunia x hybrida	CMA57156.1	X81393	Oryza sativa
BAA03436.1	D14588	Petunia x hybrida	AAG56872.1	AF239819	Zea mays
AAC32274.1	AF081575	Petunia x hybrida	AA017809.1	AF090835	Mesembryanthemum crystallinum
CA090850.1	AF011862	Catharanthus roseus	CAP43659.1	X61387	Zea mays
AAG49299.1	AF313489	Callistephus chinensis	BAF76187.1	AF271237	Zea mays
AAG49300.1	AF313490	Lycianthes rantonnei	BAB21591.1	AB036788	Oryza sativa
CAA50155.1	X70824	Solanum melongena	BNE21589.1	AB036786	Oryza sativa
BAA03440.1	D14590	Campanula medium			
CA080265.1	Z22544	Petunia x hybrida			
AAB17562.1	U72654	Eustoma grandiflorum			
BAG49301.1	AF313491	Matthiola incana			

RAK31592.1	AY029178	Brassica rapa subsp. pekinensis	AAC39358.1	AF005655	Echechozia californica
AGS3645.1	AF032917	Vicia sativa	ADT7487.1	AF049347	Barberis stolonifera
ADL0204.1	AF030260	Vicia sativa	SEQ ID NO. 2688		
CB41474.1	AJ238402	Catharanthus roseus	BAA13524.1	D87984	Eggyrium esculentum
ANB94366.1	AF022457	Glycine max	BAB20886.1	AF033294	Oryza sativa
CAH9260.1	Z49263	Pisum sativum	BAF8067.1	AF286593	Triticum aestivum
AD56282.1	AY0423	Petunia x hybrida	CAH0508.1	AF001903	Triticum turgidum subsp. durum
CAH70575.1	Y09423	Nepeta racemosa	CAA41415.1	XS8527	Nicotiana glauca
CAH50155.1	Y08824	Solanum melongera	BAA3694.1	U59379	Brassica napus
AAA22913.1	M32885	Persea americana	BAA25681.1	AB010434	Brassica rapa
BAA22423.1	AB001380	Glycyrrhiza echinata	BAA04864.1	D21636	Oryza sativa
AB94588.1	AF022459	Glycine max	BAA51522.1	U92541	Oryza sativa
BAH74466.1	AF022733	Glycyrrhiza echinata	BAA05546.1	D26547	Oryza sativa
AB94592.1	AF022463	Glycine max	AAC32111.1	AF051206	Picea mariana
BAH84072.1	AB028152	Torenia hybrida	AGS35777.1	AF273844	Brassica oleracea var.
BAA12159.1	D83968	Glycine max	albojilabra		Brassica napus
BAH1732.1	L19074	Catharanthus roseus	BAH53695.1	U59380	Ricinus communis
SEQ ID NO. 2683			CAH94334.1	Z70677	Nicotiana glauca
CAN84230.1	Z34465	Zea mays	CAH77847.1	Z11603	Nicotiana glauca
AD55979.1	AF159296	Lycopersicon esculentum	BH83913.1	AF002912	Oryza sativa
AD55980.1	AF159297	Zea mays	ADH49230.1	AF159385	Hordeum bulbosum
SEQ ID NO. 2684			ADH49231.1	AF159386	Secale cereale
CAH45652.1	AJ243308	Pisum sativum	ADH49234.1	AF159389	Phalaris coarulescens
CAH28471.1	X04782	Glycine max	ADH49233.1	AF159388	Phalaris coarulescens
BAB12437.1	AB027468	Adiantum capillus-veneris	ADH49235.1	AF133127	Hevea brasiliensis
SEQ ID NO. 2685			ADH49232.1	AF159387	Lolium perenne
RAF40306.1	AF156667	Vigna radiata	CAH56954.1	AF186240	Secale cereale
BAH03763.1	D16247	Nicotiana sylvestris	CAH56950.1	X80887	Chlamydomonas reinhardtii
AAH75791.1	AF271892	Pisum sativum	CAH55399.1	X78822	Chlamydomonas reinhardtii
CAH68193.1	X99937	Spinacia oleracea	CAH53900.1	X76269	Mesembryanthemum crystallinum
ADH02980.1	AF079782	Zea mays	RAC04671.1	U018174	Pisum sativum
RAH95705.1	AB042644	Oryza sativa	CAH49358.1	U35631	Brassica napus
RAH95704.1	AB042643	Oryza sativa	CAH52409.1	U76831	Brassica napus
AGH48833.1	AC084218	Oryza sativa	ADH45358.1	AF160870	Brassica napus
SEQ ID NO. 2687			CAH33082.1	X14959	Spinacia oleracea
CAH51839.1	AF025430	Papaver somniferum	CAH35827.1	X31463	Spinacia oleracea
ADH02352.1	S65550	Echechozia californica	CAH35826.1	X31462	Spinacia oleracea
			CAH50998.1	X63537	Pisum sativum
			CAH06736.1	AJ005841	Oryza sativa

RA049157.1	U35930	Pisum sativum	AA63452.1	M55191	Solanum tuberosum
CMA56851.1	X80988	Chlamydomonas reinhardtii	EA04611.1	D17765	Oryza sativa
X78821	X78821	Chlamydomonas reinhardtii			
CMA44209.1	X62335	Chlamydomonas reinhardtii			
CA060735.1	A0005840	Triticum aestivum			
RA03681.1	U43609	Chlamydomonas reinhardtii			
SEQ ID NO. 2689					
AA64227.1	AF248647	Lycopersicon pennellii			
AA01264.1	AF006079	Solanum berthaultii			
AA01263.1	AF006078	Solanum berthaultii			
AA01265.1	AF006080	Solanum berthaultii			
CA70816.1	Y09603	Hordeum vulgare			
AA04510.1	D17586	Oryza sativa			
AA04708.1	AF242849	Lycopersicon esculentum			
AA032940.1	J03897	Hordeum vulgare			
CA059202.1	X78878	Hordeum vulgare			
CA055478.1	X78877	Hordeum vulgare			
EA080188.1	AP002539	Oryza sativa			
CA070815.1	Y09602	Hordeum vulgare			
AA022150.1	AF061282	Sorghum bicolor			
AA022963.2	AF141364	Matricaria chamomilla			
CA070817.1	Y09604	Hordeum vulgare			
EA04511.1	D17587	Oryza sativa			
BA001757.1	D10985	Oryza sativa			
AA022151.1	AF061282	Sorghum bicolor			
CA0558992.1	X78876	Hordeum vulgare			
EA034235.1	AF001633	Oryza sativa			
BA011127.1	AJ271659	Cicer arietinum			
BA019126.1	AF002839	Oryza sativa			
AA022164.1	AF061282	Sorghum bicolor			
AA032062.1	U49382	Vigna radiata			
AA032064.1	U49741	Vigna radiata			
CA032216.1	Z68130	Pisum sativum			
SEQ ID NO. 2691					
RA067587.1	AF095521	Citrus x paradisi			
CA033682.1	Z32849	Ricinus communis			
AA063451.1	M55190	Solanum tuberosum			
CA033683.1	Z32850	Ricinus communis			
RA067586.1	AF095520	Citrus x paradisi			
SEQ ID NO. 2692					
CA054612.1	X77462	Manihot esculenta			
CA054609.1	X77459	Manihot esculenta			
CA054611.1	X77461	Manihot esculenta			
CA054613.1	X77463	Manihot esculenta			
CA054623.1	Y10871	Dortheanthus bellidiformis			
CA0536653.1	U32644	Nicotiana tabacum			
CA0536653.1	AF346431	Nicotiana tabacum			
AA01647.1	AF190634	Nicotiana tabacum			
CA0536652.1	U32643	Nicotiana tabacum			
CA0536652.1	U32643	Nicotiana tabacum			
CA0536652.1	U32643	Nicotiana tabacum			
AA017077.1	AF194453	Sorghum bicolor			
EA089009.1	AB027455	Petunia x hybrida			
CA059450.1	X85138	Lycopersicon esculentum			
EA083484.1	AF031274	Matricaria baicalensis			
AA098390.1	AF237143	Brassica napus			
CA034623.1	AB013598	Verbena x hybrida			
AA004166.1	AF101972	Phaseolus lunatus			
BA041021.1	AB047094	Vitis vinifera			
BA041023.1	AB047096	Vitis vinifera			
BA041025.1	AB047098	Vitis vinifera			
BA041019.1	AB047092	Vitis vinifera			
AA021086.1	AF127218	Porsythia x intermedia			
BA041017.1	AB047090	Vitis labrusca x Vitis vinifera			
BA041026.1	AB047099	Vitis vinifera			
BA041024.1	AB047097	Vitis vinifera			
BA041022.1	AB047095	Vitis vinifera			
AA081682.1	AF000371	Vitis vinifera			
BA041020.1	AB047093	Vitis vinifera			
AA081683.1	AF000372	Vitis vinifera			
BA041018.1	AB047091	Vitis labrusca x Vitis vinifera			
BA093039.1	AB033758	Citrus unshiu			
SEQ ID NO. 2693					
CA009881.1	AJ011939	Trifolium repens			
CA062228.1	X90695	Medicago sativa			
AA041812.1	I36158	Medicago sativa			
CA071493.1	Y10469	Spinacia oleracea			

CAA67385.1	Z47076	Malus x domestica	AA027591.1	AF121354	Petroselinum crispum
CAC11128.1	AT298828	Fagus sylvatica	BA07069.1	AB035271	Matricaria chamomilla
CAA67387.1	Z47077	Malus x domestica	SEQ ID NO. 2698		
CAA67386.1	Z47077	Malus x domestica	CAA06223.1	AJ004923	Lycopersicon esculentum
BA02333.1	AB038786	Vicia faba	SEQ ID NO. 2699		
BA02334.1	AB038787	Vicia faba	CAA59472.1	X85206	Catharanthus roseus
BA02337.1	AB038790	Vicia faba	BAB16431.1	AB041519	Nicotiana tabacum
BA02338.1	AB038791	Vicia faba	AA078903.1	AF248055	Glycine max
BA02336.1	AB038789	Vicia faba	AAC60566.1	S68113	Brassica napus
SEQ ID NO. 2695			AA049369.1	U34333	Phaseolus vulgaris
AA033945.1	J03919	Glycine max	AA01800.1	AF026382	Fragaria x ananassa
CAA48297.1	X68215	Pisum sativum	BA013150.1	D66629	Nicotiana tabacum
AA033944.1	J03920	Glycine max	BA016428.1	AB041516	Nicotiana tabacum
CAA48298.1	X68216	Pisum sativum	BA05941.1	AB035125	Nicotiana tabacum
CAA48299.1	X68217	Pisum sativum	BA013155.1	D66721	Nicotiana tabacum
CAA48300.1	X68218	Pisum sativum	BA018205.1	U73214	Triticum aestivum
AA050278.1	AF169830	Glycine max	CA057810.1	X92413	Asparagus officinalis
SEQ ID NO. 2696			AA033132.1	L20755	Cuscuta reflexa
AA037515.1	I44134	Cucumis sativus	CAA2599.1	X00432	Zea mays
AA016139.1	AF096299	Nicotiana tabacum	CAA03666.1	X61395	Lycopersicon esculentum
BA077383.1	AB020590	Nicotiana tabacum	CAA0361.1	X37076	Lycopersicon esculentum
BA066031.1	AB026880	Nicotiana tabacum	SEQ ID NO. 2701		
AA031956.1	AF060595	Empicollia brachycarpa	CAA52149.1	X73961	Cucumis sativus
AA055974.1	AF121353	Petroselinum crispum	AA030416.1	U92815	Citrullus lanatus
AA049277.1	U48631	Petroselinum crispum	CAA07345.1	X66874	Phaseolus vulgaris
BA02107.1	AB022693	Nicotiana tabacum	AAC60559.2	S59747	Mitochondrion Solanum tuberosum
CAA08326.1	Z48429	Avena fatua	AAA33637.1	L03299	Pisum sativum
AA016138.1	AF096298	Nicotiana tabacum	AA096660.1	AF039084	Spinacia oleracea
AA023998.1	AF193802	Oryza sativa	AA091473.1	AF035458	Spinacia oleracea
AAC49529.1	U58540	Petroselinum crispum	AA091472.1	AF035457	Spinacia oleracea
AA035658.1	AF204925	Petroselinum crispum	CAA65356.1	X96502	Chlamydomonas reinhardtii
BA077358.1	AB020023	Nicotiana tabacum	AA096659.1	AF039083	Spinacia oleracea
BA016432.1	AB041520	Nicotiana tabacum	AA091471.1	AF035456	Spinacia oleracea
CAA08331.1	Z48431	Avena fatua	BA018570.1	M99565	Spinacia oleracea
CB066338.1	AJ279697	Betula pendula	BA072128.1	AJ249329	Pisum sativum
AAC49528.1	U56834	Petroselinum crispum	AA034133.1	L08830	Lycopersicon esculentum
AA035659.1	AF204926	Petroselinum crispum	CAA07867.1	X93515	Pisum sativum
AA051864.1	AF193771	Nicotiana tabacum	CAA030016.1	X06932	Petunia x hybrida
AA051863.1	AF193770	Nicotiana tabacum			

AAB59745.1	AF005953	Triticum aestivum
AAB88134.1	AF034618	Spinacia oleracea
CMA44620.1	X62799	Glycine max
CMA37971.1	X54030	Lycopersicon esculentum
AAB88009.1	AF035414	Brassica napus
CMB72130.1	AJ249331	Cucumis sativus
AAB34134.1	AF161180	Malus x domestica
CMB72129.1	AJ249330	Cucumis sativus
CMA47948.1	X67711	Oryza sativa
AAB88133.1	AF034617	Spinacia oleracea
AAB88132.1	AF034616	Spinacia oleracea
AAB97316.1	AF033852	Spinacia oleracea
CMA43711.1	X61491	Spinacia oleracea

What is claimed is:

1. A method of identifying a stress condition to which a plant cell has been exposed, the method comprising:
 - a) contacting nucleic acid molecules representative of expressed polynucleotides in the plant cell with an array of probes representative of the plant cell genome; and
 - b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response, thereby identifying the stress condition to which the plant cell was exposed.
2. The method of claim 1, wherein the stress condition is an abiotic stress condition.
3. The method of claim 2, wherein the abiotic stress is a cold stress condition, an osmotic stress condition, a saline stress condition, or a combination thereof.
4. The method of claim 1, wherein the profile is characteristic of exposure to a single stress condition.
5. The method of claim 1, wherein the profile is characteristic of a cold stress response, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1-155, 157-229, 230-232, 234-557, 559-572, 574-605, 607-634, 636-634, 636-786, 788-812, and 814-1261.
6. The method of claim 1, wherein the profile is characteristic of a cold stress response, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1-1261.
7. The method of claim 1, wherein the profile is characteristic of an osmotic stress response, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:2428-2585.

8. The method of claim 1, wherein the profile is characteristic of a saline stress response, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:2227-2427.

5 9. The method of claim 2, wherein the profile is characteristic of exposure to at least two abiotic stress conditions.

10 10. The method of claim 9, wherein the abiotic stress conditions are cold and osmotic stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1699-1725, 1727-1865, 1867-1917, 1919-1927, and 1929-1969.

15 11. The method of claim 9, wherein the abiotic stress conditions are cold and osmotic stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1699-1969.

20 12. The method of claim 9, wherein the abiotic stress conditions are cold and saline stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1970-2226.

13. The method of claim 9, wherein the abiotic stress conditions are osmotic and saline stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:2586-2703.

25 14. The method of claim 9, wherein the abiotic stress conditions are cold, osmotic and saline stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, and 1634-1698.

30 15. The method of claim 9, wherein the abiotic stress conditions are cold, osmotic and saline stress conditions, and wherein the expressed polynucleotides comprise one or a plurality of SEQ ID NOS:1262-1698.

16. The method of claim 1, wherein the nucleic acid molecules representative of expressed polynucleotides in the plant cell are RNA molecules or cDNA molecules.

5

17. The method of claim 1, wherein the array of probes representative of the plant cell genome is immobilized on a microchip.

18. A method for determining whether a test plant has been exposed to an abiotic stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,

15 wherein the probe comprises at least 15 nucleotides of a plant stress-regulated gene, provided said gene does not comprise a nucleotide sequence of a polynucleotide as set forth in any of SEQ ID NOS:156, 229, 233, 558, 573, 606, 635, 787, 813, 1263, 1386, 1391, 1405, 1445, 1484, 1589, 1609, 1634, 1726, 1866, 1918 or 1928, or a nucleotide sequence complementary thereto,

whereby

20 detecting selective hybridization of at least one nucleic acid probe, or detecting a change in a level of selective hybridization as compared to a level of selective hybridization obtained using nucleic acid molecules representative of expressed polynucleotides in cells of a plant known not have been exposed to an abiotic stress,

25 indicates that the test plant has been exposed to an abiotic stress, and whereby an absence of selective hybridization of at least one nucleic acid probe indicates that the test plant has not been exposed to an abiotic stress.

19. The method of claim 18, wherein the abiotic stress is cold stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1261 or a nucleotide sequence complementary thereto.

20. The method of claim 18, wherein the abiotic stress is saline stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2226-2427 or a nucleotide sequence complementary thereto.

21. The method of claim 18, wherein the abiotic stress is osmotic stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in two or more of SEQ ID NOS:2428-2585 or a nucleotide sequence complementary thereto.

22. A method for determining whether a test plant has been exposed to a cold stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,

wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1261, or a nucleotide sequence complementary thereto,

whereby

detecting selective hybridization of at least one nucleic acid probe, or detecting a change in a level of selective hybridization as compared to a level of selective hybridization obtained using nucleic acid molecules representative of expressed polynucleotides in cells of a plant known not have been exposed to a cold stress,

indicates that the test plant has been exposed to a cold stress, and

whereby an absence of selective hybridization of at least one nucleic acid probe indicates that the test plant has not been exposed to a cold stress.

23. A method for determining whether a test plant has been exposed to a saline stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,

wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2226-2427, or a nucleotide sequence complementary thereto,

whereby

detecting selective hybridization of at least one nucleic acid probe, or detecting a change in a level of selective hybridization as compared to a level of selective hybridization obtained using nucleic acid molecules representative of expressed polynucleotides in cells of a plant known not have been exposed to a saline stress,

indicates that the test plant has been exposed to a saline stress, and whereby an absence of selective hybridization of at least one nucleic acid probe indicates that the test plant has not been exposed to a saline stress.

24. A method for determining whether a test plant has been exposed to an osmotic stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,

wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in two or more of SEQ ID NOS:2428-2585, or a nucleotide sequence complementary thereto,

30

whereby

detecting selective hybridization of at least one nucleic acid probe, or
detecting a change in a level of selective hybridization as compared to
a level of selective hybridization obtained using nucleic acid molecules
representative of expressed polynucleotides in cells of a plant known not have
5 been exposed to an osmotic stress,

indicates that the test plant has been exposed to an osmotic stress, and
whereby an absence of selective hybridization of at least one nucleic acid
probe indicates that the test plant has not been exposed to an osmotic stress.

10

25. A method for determining whether a test plant has been exposed to a
combination of abiotic stress conditions, the method comprising contacting nucleic
acid molecules representative of expressed polynucleotides in cells of the test plant
with at least one nucleic acid probe under conditions suitable for selective

15 hybridization to a complementary nucleotide sequence,

whereby

detecting selective hybridization of at least one nucleic acid probe, or
detecting a change in a level of selective hybridization as compared to
a level of selective hybridization obtained using nucleic acid molecules
representative of expressed polynucleotides in cells of a plant known not have
20 been exposed to a combination of stress conditions,

indicates that the test plant has been exposed to a combination of
abiotic stress conditions, and

whereby an absence of selective hybridization of at least one nucleic acid
25 probe indicates that the test plant has not been exposed to a combination of abiotic
stress conditions.

26. The method of claim 25, wherein the combination of abiotic stress
conditions is a combination of a cold stress and an osmotic stress, and wherein the
30 probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of
SEQ ID NOS:1699-1969, or a nucleotide sequence complementary thereto.

27. The method of claim 25, wherein the combination of abiotic stress conditions is a combination of a cold stress and a saline stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1970-2226, or a nucleotide sequence complementary thereto.

5

28. The method of claim 25, wherein the combination of abiotic stress conditions is a combination of an osmotic stress and a saline stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2586-2703, or a nucleotide sequence complementary thereto.

10

29. The method of claim 25, wherein the combination of abiotic stress conditions is a combination of a cold stress, a saline stress and an osmotic stress, and wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1262-1698, or a nucleotide sequence complementary thereto.

15

30. A method for determining whether a test plant has been exposed to a cold stress and an osmotic stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,

20

wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1699-1969, or a nucleotide sequence complementary thereto,

25

whereby

detecting selective hybridization of at least one nucleic acid probe, or
detecting a change in a level of selective hybridization as compared to
a level of selective hybridization obtained using nucleic acid molecules
representative of expressed polynucleotides in cells of a plant known not have
been exposed to a cold stress and an osmotic stress,

30

indicates that the test plant has been exposed to a cold stress and an osmotic stress, and

whereby an absence of selective hybridization of at least one nucleic acid probe indicates that the test plant has not been exposed to a cold stress and an osmotic stress.

- 5 31. A method for determining whether a test plant has been exposed to a cold stress and a saline stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in cells of the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,
- 10 wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1970-2226, or a nucleotide sequence complementary thereto,
- whereby
- detecting selective hybridization of at least one nucleic acid probe, or
- 15 detecting a change in a level of selective hybridization as compared to a level of selective hybridization obtained using nucleic acid molecules representative of expressed polynucleotides in cells of a plant known not have been exposed to a cold stress and a saline stress,
- indicates that the test plant has been exposed to a cold stress and a
- 20 saline stress, and
- whereby an absence of selective hybridization of at least one nucleic acid probe indicates that the test plant has not been exposed to a cold stress and a saline stress.
- 25 32. A method for determining whether a test plant has been exposed to an osmotic stress and a saline stress, the method comprising contacting nucleic acid molecules representative of expressed polynucleotides in the test plant with at least one nucleic acid probe under conditions suitable for selective hybridization to a complementary nucleotide sequence,
- 30 wherein the probe comprises at least 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2586-2703, or a nucleotide sequence complementary thereto,

whereby

detecting selective hybridization of at least one nucleic acid probe, or

detecting a change in a level of selective hybridization as compared to

a level of selective hybridization obtained using nucleic acid molecules

5 representative of expressed polynucleotides in cells of a plant known not have
been exposed to an osmotic stress and a saline stress,

indicates that the test plant has been exposed to an osmotic stress and
saline stress, and

whereby an absence of selective hybridization of at least one nucleic acid

10 probe indicates that the test plant has not been exposed to an osmotic stress and
saline stress.

33. A method for determining whether a test plant has been exposed to a cold
stress, a saline stress and an osmotic stress, the method comprising contacting nucleic
15 acid molecules representative of expressed polynucleotides in cells of the test plant
with a plurality of nucleic acid probes under conditions suitable for selective
hybridization to a complementary nucleotide sequence,

wherein the probe comprises at least 15 nucleotides of a nucleotide sequence
as set forth in any of SEQ ID NOS:1262-1698, or a nucleotide sequence
20 complementary thereto,

whereby

detecting selective hybridization of at least one nucleic acid probe, or

detecting a change in a level of selective hybridization as compared to

a level of selective hybridization obtained using nucleic acid molecules

25 representative of expressed polynucleotides in cells of a plant known not have
been exposed to a cold stress, a saline stress, and an osmotic stress,

indicates that the test plant has been exposed to a cold stress, a saline
stress and an osmotic stress, and

whereby an absence of selective hybridization of at least one nucleic acid

30 probe indicates that the test plant has not been exposed to a cold stress, a saline stress
and an osmotic stress.

34. A method for determining whether a test plant has been exposed to a cold stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:1-155, 157-229, 230-232, 234-557, 559-572, 574-605, 607-634, 636-634, 636-786, 788-812, and 814-1261 in cells of the test plant,

wherein

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, or

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress,

indicates the test plant has been exposed to a cold stress, or
wherein

detecting a level of expression that is less than at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, or

detecting a level of expression that is at least two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress,

indicates the test plant has not been exposed to a cold stress.

35. A method for determining whether a test plant has been exposed to a saline stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:2226-2427 in cells of the test plant,

wherein

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a saline stress, or

5 detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a saline stress,

indicates the test plant has been exposed to a saline stress, or
wherein

10 detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a saline stress, or

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant
15 known to be exposed to a saline stress,

indicates the test plant has not been exposed to a saline stress.

36. A method for determining whether a test plant has been exposed to an osmotic stress, the method comprising detecting a level of expression of at least one
20 polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:2428-2585 in cells of the test plant,

wherein

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant
25 not exposed to an osmotic stress, or

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant
known to be exposed to an osmotic stress,

indicates the test plant has been exposed to a osmotic stress, or

30

wherein

detecting a level of expression that is less than about two-fold different from level of expression of the at least one polynucleotide in cells of a plant not exposed to an osmotic stress, or

5 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to an osmotic stress,

 indicates the test plant has not been exposed to a osmotic stress.

10 37. A method for determining whether a test plant has been exposed to a cold stress and an osmotic stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:1699-1969 in cells of the test plant,

 wherein

15 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress and an osmotic stress, or

 detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress and an osmotic stress,

20 indicates the test plant has been exposed to a cold stress and an osmotic stress, or

 wherein

 detecting a level of expression that is less than about two-fold different from as a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress and an osmotic stress, or

25 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress and an osmotic stress,

30 indicates the test plant has not been exposed to a cold stress and an osmotic stress.

38. A method for determining whether a test plant has been exposed to a cold stress and a saline stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:1970-2226 in cells of the test plant,

5 wherein

 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress and a saline stress, or

 detecting a level of expression that is less than about two-fold different from as a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress and a saline stress,

10 indicates the test plant has been exposed to a cold stress and a saline stress, or
 wherein

15 detecting a level of expression that is less than about two-fold different from as a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress and a saline stress, or

 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress and a saline stress,

20 indicates the test plant has not been exposed to a cold stress and a saline stress.

39. A method for determining whether a test plant has been exposed to a saline stress and an osmotic stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:2586-2703 in cells of the test plant,

 wherein

 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a saline stress and an osmotic stress, or

30

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a saline stress and an osmotic stress,

5 indicates the test plant has been exposed to a saline stress and an osmotic stress, or wherein

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a saline stress and an osmotic stress, or

10 detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to saline stress and an osmotic stress,

indicates the test plant has not been exposed to a saline stress and an osmotic stress.

15

40. A method for determining whether a test plant has been exposed to a cold stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth SEQ ID NOS:1-155, 157-229, 230-232, 234-557, 559-572, 574-605, 607-634, 636-634, 636-786, 788-812, 20 and 814-1261 in cells of the test plant,

wherein

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, or

25 detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress,

indicates the test plant has been exposed to a cold stress, or wherein

30 detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, or

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress,

indicates the test plant has not been exposed to a cold stress.

5

41. A method for determining whether a test plant has been exposed to a cold stress, a saline stress and an osmotic stress, the method comprising detecting a level of expression of at least one polynucleotide comprising a nucleotide sequence as set forth in SEQ ID NOS:1262-1698 in cells of the test plant,

10

wherein

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, a saline stress and an osmotic stress, or

15

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress, a saline stress and an osmotic stress,

indicates the test plant has been exposed to a cold stress, a saline stress and an osmotic stress, or

wherein

20

detecting a level of expression that is less than about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant not exposed to a cold stress, a saline stress and an osmotic stress, or

25

detecting a level of expression that is at least about two-fold different from a level of expression of the at least one polynucleotide in cells of a plant known to be exposed to a cold stress, a saline stress and an osmotic stress,

indicates the test plant has not been exposed to a cold stress, a saline stress and an osmotic stress.

42. A method of producing a transgenic plant comprising plant cells that exhibit altered responsiveness to at least one stress condition, the method comprising introducing a polynucleotide portion of a plant stress-regulated gene into a plant cell genome, wherein the polynucleotide portion of the stress-regulated gene does not
5 comprise a nucleotide sequence as set forth in any of SEQ ID NOS:156, 229, 233, 558, 573, 606, 635, 787, 813, 1263, 1386, 1391, 1405, 1445, 1484, 1589, 1609, 1634, 1726, 1866, 1918 or 1928, whereby the polynucleotide portion of the plant stress-regulated gene modulates a response of the plant cells to at least one stress condition, thereby producing a transgenic plant comprising plant cells that exhibit altered
10 responsiveness to the stress condition.

43. The method of claim 42, wherein the stress condition is cold stress, and wherein the polynucleotide portion of a plant stress-regulated gene comprises a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232,
15 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1261, 2704-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, and 3313-3955.

44. The method of claim 42, wherein the stress condition is saline stress, and
20 wherein the polynucleotide portion of a plant stress-regulated gene comprises a nucleotide sequence as set forth in any of SEQ ID NOS:2226-2427 and 4910-5107.

45. The method of claim 42, wherein the stress condition is osmotic stress, and wherein the polynucleotide portion of a plant stress-regulated gene comprises a
25 nucleotide sequence as set forth in any of SEQ ID NOS:2428-2585 and 5108-5263.

46. A method of producing a transgenic plant comprising plant cells that exhibit altered responsiveness to a combination of at least two stress conditions, the method comprising introducing a polynucleotide portion of a plant stress-regulated gene into a plant cell genome, whereby the polynucleotide portion of the plant stress-regulated gene modulates a response of the plant cells to a combination of at least two stress conditions, thereby producing a transgenic plant comprising plant cells that exhibit altered responsiveness to the stress conditions.

47. The method of claim 46, wherein the combination of at least two stress conditions is a combination of cold stress and osmotic stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:1669-1969 and 4389-4654.

48. The method of claim 46, wherein the combination of at least two stress conditions is a combination of cold stress and osmotic stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:1699-1725, 1727-1865, 1867-1917, 1919-1927, 1929-1969, 4389-4414, 4416-4552, 4554-4602, 4604-4612, and 4613-4654.

49. The method of claim 46, wherein the combination of at least two stress conditions is a combination of cold stress and saline stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:1970-2226 and 4655-4909.

50. The method of claim 46, wherein the combination of at least two stress conditions is a combination of osmotic stress and saline stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:2586-2703 and 5264-5379.

51. The method of claim 46, wherein the combination of at least two stress conditions is a combination of cold stress, osmotic stress and saline stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:1262-1698 and 3956-4388.

5

52. The method of claim 46, wherein the combination of at least two stress conditions is a combination of cold stress, osmotic stress and saline stress, and wherein the polynucleotide portion of the plant stress-regulate gene comprises a nucleotide sequences as set forth in any of SEQ ID NOS:1262, 1264-1386, 1387-1390,

10 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1698, 3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, and 4326-4388.

53. The method of any of claim 42 to 52, wherein the polynucleotide portion
15 of the plant stress-regulated gene encodes a stress-regulated polypeptide or functional peptide portion thereof.

54. The method of claim 53, wherein the stress-regulated polypeptide or functional peptide portion thereof increases the stress tolerance of the transgenic
20 plant.

55. The method of claim 53, wherein the stress-regulated polypeptide or functional peptide portion thereof decreases the stress tolerance of the transgenic
25 plant.

56. The method of claim 53, wherein the polynucleotide portion of the plant stress-regulated gene is operatively linked to a heterologous promoter.

57. The method of any of claim 42 to 52, wherein the polynucleotide portion
30 of the plant stress-regulated gene comprises a stress-regulated regulatory element.

58. The method of claim 57, wherein, upon introducing the stress-regulated regulatory element into the plant cell, the regulatory element integrates into the plant cell genome in a site-specific manner.

5 59. The method of claim 58, wherein, upon integrating into the plant cell genome, the regulatory element is operatively linked to a heterologous nucleotide sequence, which can be expressed in response to a stress condition specific for the regulatory element.

10 60. The method of claim 57, wherein the plant stress-regulated regulatory element is a mutant regulatory element, which is not responsive to the stress condition, whereby upon integrating into the plant cell genome, the mutant regulatory element disrupts an endogenous stress-regulated regulatory element of a plant stress-regulated gene, thereby altering the responsiveness of the plant stress-regulated gene
15 to the stress condition.

61. The method of any of claim 42 to 60, wherein the stress is an abiotic stress.

20 62. The method of claim 61, wherein the abiotic stress is selected from the group consisting of an abnormal level of cold, osmotic pressure, salinity, and a combination thereof.

63. The method of claim 57, wherein the stress-regulated regulatory element is operatively linked to a polynucleotide encoding a detectable marker.

25

64. A transgenic plant produced by the method of any of claims 42 to 63.

65. A plant cell from the transgenic plant of claim 64, wherein said plant cell exhibits altered responsiveness to the stress condition or stress conditions.

30

66. A seed produced by the transgenic plant of claim 64.

67. A cDNA or genomic DNA library prepared from the transgenic plant of claim 64, or from a plant cell from said transgenic plant, wherein said plant cell exhibits altered responsiveness to the stress condition.

5 68. A method for monitoring a population of plants for exposure to a stress condition or combination of stress conditions, the method comprising:

 a) introducing into the population of a plants a sentinel plant, wherein said sentinel plant is a transgenic plant of claim 64, which comprises plant cells containing a stress-regulated regulatory element is operatively linked to a polynucleotide encoding a detectable marker; and

10

 b) examining the sentinel plant for expression of the detectable marker, which is indicative of exposure of the population of plants to a stress condition or combination of stress conditions, thereby monitoring the population of plants for exposure to a stress condition or combination of stress conditions.

15

69. The method of claim 68, wherein said stress condition or combination of stress conditions is an abiotic stress condition or combination of abiotic stress conditions.

20

70. The method of claim 68 or 69, wherein said stress condition or combination of stress conditions is cold stress, osmotic stress, saline stress, and a combination thereof.

25 71. The method of any of claims 68 to 70, wherein the stress condition is a cold stress condition, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:2704-3955.

72. The method of any of claims 68 to 70, wherein the stress condition is a cold stress condition, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:2704-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, and 3313-3955.

73. The method of any of claims 68 to 70, wherein the stress condition is a saline stress condition, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:4910-5107.

74. The method of any of claims 68 to 70, wherein the stress condition is an osmotic stress condition, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:5108-5263.

75. The method of any of claims 68 to 70, wherein the combination of stress conditions is cold stress and osmotic stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NO. 4389-4654.

76. The method of any of claim 68 to 70, wherein the combination of stress conditions is a cold stress and an osmotic stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:4389-4414, 4416-4552, 4554-4602, 4604-4612, and 4613-4654.

77. The method of any of claims 68 to 70, wherein the combination of stress condition is a cold stress and a saline stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:4655-5909.

78. The method of any of claims 68 to 70, wherein the combination of stress conditions is an osmotic stress and a saline stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:5264-5379.

79. The method of any of claims 68 to 70, wherein the combination of stress conditions is a cold stress, an osmotic stress, and a saline stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:3956-4388.

5

80. The method of any of claims 68 to 70, wherein the combination of stress conditions is a cold stress, an osmotic stress, and a saline stress, and wherein the regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, and 4326-4388.

10

81. The method of any of claims 68 to 80, wherein the detectable marker is visibly detectable.

15

82. The method of any of claims 68 to 80, wherein said detectable marker comprises a luminescent detectable marker.

83. The method of any of claims 68 to 80, wherein said detectable marker comprises a fluorescent detectable marker.

20

84. The method of claim 83, wherein said fluorescent detectable marker comprises a green fluorescent protein, a yellow fluorescent protein, a cyan fluorescent protein, a red fluorescent protein, or an enhanced or modified form thereof.

25

85. A method of selecting a plant having an altered resistance to an abiotic stress condition or a combination of abiotic stress conditions, the method comprising:

a) contacting nucleic acid molecules representative of expressed polynucleotides in a plant cell of a plant to be examined for having an altered resistance to an abiotic stress with a nucleic acid probes that selectively hybridizes under stringent conditions to a plant stress-regulated gene comprising a nucleotide sequence as set forth in any of SEQ ID NO:1-5379;

30

- b) detecting a level of selective hybridization of the nucleic acid probes to a nucleic acid molecule representative of an expressed polynucleotide in the plant cell, wherein the level of selective hybridization corresponds to the level of the expressed polynucleotide in the plant cell, which is indicative of resistance of the plant to an abiotic stress; and
- 5 c) selecting a plant having a level of expression of a polynucleotide indicative of altered resistance to an abiotic stress condition.

86. The method of claim 85, wherein the abiotic stress condition is cold stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1-1261 and 2704-3955.

87. The method of claim 85, wherein the abiotic stress condition is cold stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1261, 2704-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, and 3313-3955.

88. The method of claim 85, wherein the abiotic stress condition is saline stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2226-2427 and 4910-5107.

89. The method of claim 85, wherein the abiotic stress condition is osmotic stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:2428-2585 and 5108-5263.

90. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of cold stress and osmotic stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1669-1969 and 4389-4654.

91. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of cold stress and osmotic stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in any of SEQ ID NOS:1699-1725, 1727-1865, 1867-1917, 1919-1927,
5 1929-1969, 4389-4414, 4416-4552, 4554-4602, 4604-4612, and 4613-4654.

92. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of cold stress and saline stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set forth in
10 any of SEQ ID NOS:1970-2226 and 4655-4909.

93. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of osmotic stress and saline stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide sequence as set
15 forth in any of SEQ ID NOS:2586-2703 and 5264-5379.

94. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of cold stress, osmotic stress and saline stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide
20 sequence as set forth in any of SEQ ID NOS:1262-1698 and 3956-4388.

95. The method of claim 85, wherein the combination of abiotic stress conditions is a combination of cold stress, osmotic stress and saline stress, and wherein the nucleic acid probe comprises at least about 15 nucleotides of a nucleotide
25 sequence as set forth in any of SEQ ID NOS:1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1698, 3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, and 4326-4388.

96. A method of modulating the responsiveness of a plant cell to a stress condition, the method comprising introducing a polynucleotide portion of a plant stress-regulated gene into the plant cell, wherein said gene comprises a nucleotide sequence of a polynucleotide as set forth in any of SEQ ID NOS:1-155, 157-228,
5 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1725, 1727-1865, 1867-1917, 1919-1927, 1929-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3313-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279,
10 4281-4299, 4301-4324, 4326-4414, 4416-4552, 4554-4602, and 4604-5379, thereby modulating the responsiveness of the plant cell to a stress condition.

97. The method of claim 96, wherein the responsiveness of the plant cell is increased upon exposure to the stress condition.

15

98. The method of claim 97, wherein increased responsiveness of the plant cell increases the stress tolerance of the plant cell to the stress condition.

99. The method of claim 96, wherein the responsiveness of the plant cell is
20 decreased upon exposure to the stress condition.

100. The method of claim 99, wherein decreased responsiveness of the plant cell increases the stress tolerance of the plant cell to the stress condition.

25 101. The method of claim 96, wherein the polynucleotide portion of the plant stress-regulated gene integrates into the genome of the plant cell, thereby modulating the responsiveness of the plant cell to the stress condition.

102. The method of claim 96, wherein the polynucleotide portion of the plant
30 stress-regulated gene encodes a stress-regulated polypeptide or functional peptide portion thereof.

103. The method of claim 102, wherein the stress-regulated polypeptide or functional peptide portion thereof increases the responsiveness of the plant cell to the stress condition.

5 104. The method of claim 102, wherein the polynucleotide portion of the plant stress-regulated gene is operatively linked to a heterologous promoter.

10 105. The method of claim 102, wherein the polynucleotide portion of the plant stress-regulated gene contains a mutation, whereby upon integrating into the plant cell genome, the polynucleotide disrupts an endogenous plant stress-regulated gene, thereby modulating the responsiveness of said plant cell to the stress condition.

15 106. The method of claim 105, wherein the endogenous plant stress-regulated gene encodes a maladaptive stress-regulated polypeptide, and wherein said plant cell exhibits increased tolerance to the stress condition.

107. The method of claim 96, wherein the polynucleotide portion of the plant stress-regulated gene comprises a stress-regulated gene regulatory element.

20 108. The method of claim 107, wherein, the regulatory element is operatively linked to a heterologous nucleotide sequence, which, upon expression from the regulatory element in response to a stress condition, modulates the responsiveness of the plant cell to the stress condition.

25 109. The method of claim 108, wherein the heterologous nucleotide sequence encodes a stress-inducible transcription factor.

110. The method of claim 109, wherein the transcription factor is DREB1A.

111. The method of claim 108, wherein the heterologous nucleotide sequence encodes a polynucleotide specific for a plant stress-regulated gene, said polynucleotide selected from the group consisting of an antisense molecule, a ribozyme, and a triplexing agent, which, upon expression in the plant cell, reduces or inhibits expression of a stress-regulated polypeptide encoded by the gene, thereby modulating the responsiveness of the plant cell to a stress condition.

112. The method of claim 108, wherein the heterologous nucleotide sequence encodes a recombinant polypeptide comprising a zinc finger domain and a transcription effector domain.

113. The method of claim 112, wherein the transcription effector domain is a transcription activator domain.

114. The method of claim 96, wherein the stress condition is cold stress, osmotic stress, saline stress, or a combination thereof.

115. A method of expressing a heterologous nucleotide sequence in a plant cell, the method comprising introducing into the plant cell a plant stress-regulated regulatory element operatively linked to the heterologous nucleotide sequence, wherein said regulatory element comprises a nucleotide sequence as set forth in any of SEQ ID NOS:2704-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3313-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, 4326-4414, 4416-4552, 4554-4602, and 4604-5379, whereby, upon exposure of the plant cell to stress condition, the heterologous nucleotide sequence is expressed in the plant cell.

116. The method of claim 117, wherein the heterologous nucleotide sequence encodes a selectable marker.

117. The method of claim 117, wherein the heterologous nucleotide sequence encodes a polypeptide that improves the nutritional value of the plant cell.

118. The method of claim 117, wherein the heterologous nucleotide sequence encodes a polypeptide that improves the ornamental value of the plant cell.

- 5 119. A method of modulating the activity of a biological pathway in a plant cell involving a plant stress-regulated polypeptide, the method comprising introducing a polynucleotide portion of a plant stress-regulated gene into the plant cell, wherein the plant stress-regulated gene comprises a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634,
- 10 636-786, 788-812, 814-1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1725, 1727-1865, 1867-1917, 1919-1927, 1929-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3313-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, 4326-4414, 4416-4552,
- 15 4554-4602, and 4604-5379, thereby modulating the activity of the biological pathway.

120. A plant cell obtained by any of claims 96 to 121.

121. A plant comprising the plant cell of claim 122.

20

122. A method of identifying a polynucleotide that modulates a stress response in a plant cell, the methods comprising:

- a) contacting an array of probes representative of a plant cell genome and nucleic acid molecules expressed in plant cell exposed to the stress;
- 25 b) detecting a nucleic acid molecule that is expressed at a level different from a level of expression in the absence of the stress;
- c) introducing the nucleic acid molecule of step b) into a plant cell; and
- d) detecting a modulated response of the plant cell of step c) to a stress, thereby identifying a polynucleotide that modulates a stress response in
- 30 a plant cell.

123. The method of claim 124, wherein the stress is an abiotic stress.

124. The method of claim 125, wherein the abiotic stress is selected from the group consisting of an abnormal level of cold, osmotic pressure, and salinity.

5

125. The method of claim 124, wherein expression of the nucleic acid molecule increases the tolerance of the plant cell to the stress.

126. The method of claim 124, wherein, in step b), the nucleic acid molecule is expressed at a level that is less than the level of expression in the absence of the stress.

127. A transgenic plant, which contains a transgene comprising a polynucleotide portion of plant stress-regulated gene, wherein the gene comprises a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1725, 1727-1865, 1867-1917, 1919-1927, 1929-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3313-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, 4326-4414, 4416-4552, 4554-4602, and 4604-5379.

128. The transgenic plant of claim 129, wherein the transgenic plant exhibits altered responsiveness to a stress condition as compared to a corresponding wild-type plant.

129. The transgenic plant of claim 130, wherein the transgene disrupts an endogenous stress-regulated gene in the plant, thereby reducing or inhibiting expression of the gene in response to a stress condition.

30

130. The transgenic plant of claim 130, wherein the plant exhibits increased tolerance to a stress condition.

131. The transgenic plant of claim 130, wherein the plant exhibits decreased tolerance to a stress condition.

5 132. The transgenic plant of any of claims 129 to 133, wherein the transgene comprises a coding sequence of a plant stress-regulated gene.

133. The transgenic plant of claim 134, wherein the coding sequence is operatively linked to a heterologous regulatory element.

10

134. The transgenic plant of claim 135, wherein the regulatory element is a constitutively active regulatory element.

15 135. The transgenic plant of claim 135, wherein the regulatory element is an regulated regulatory element.

136. The transgenic plant of claim 135, wherein the regulatory element is a tissue specific or phase specific regulatory element.

20 137. The transgenic plant of any of claims 129 to 131, wherein the transgene comprises a plant stress-regulated regulatory element operatively linked to a heterologous nucleotide sequence.

25 138. The transgenic plant of claim 139, wherein the transgenic plant expresses a polypeptide encoded by the heterologous nucleotide sequence.

139. The transgenic plant of claim 140, wherein the polypeptide improves the nutritional value or ornamental value of the plant.

30 140. The transgenic plant of any of claims 129 to 141, wherein the plant comprises multiple transgenes.

141. The transgenic plant of claim 142, wherein the multiple transgenes comprise multiple copies of the same transgene or comprise two or more different transgenes.

- 5 142. A plant stress-regulated gene regulatory element, wherein the gene comprises a nucleotide sequence as set forth in any of SEQ ID NOS:1-155, 157-228, 230-232, 234-557, 559-572, 574-605, 607-634, 636-786, 788-812, 814-1262, 1264-1386, 1387-1390, 1392-1404, 1406-1444, 1446-1483, 1485-1588, 1590-1608, 1610-1633, 1634-1725, 1727-1865, 1867-1917, 1919-1927, 1929-2855, 2857-2928, 10 2930-2932, 2934-3256, 3258-3271, 3273-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3513-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279, 4281-4299, 4301-4324, 4326-4414, 4416-4552, 4554-4602, and 4604-5379.

143. The plant stress-regulated gene regulatory element of claim 144, 15 comprising a nucleotide sequence as set forth in any of SEQ ID NOS: 2704-2855, 2857-2928, 2930-2932, 2934-3256, 3258-3304, 3306-3323, 3325-3333, 3335-3485, 3487-3511, 3513-3956, 3958-4078, 4080-4097, 4099-4136, 4138-4175, 4177-4279,, 4281-4299, 4301-4324, 4326-4414, 4416-4552, 4554-4602, 4604-4612, and 4614-5379, or a nucleotide sequence substantially similar thereto.

20

144. A method of identifying an agent that modulates the activity of the plant stress-regulated regulatory element of claim 144 or claim 145, the method comprising:

- 25 a) contacting the regulatory element with an agent suspected of having the ability to modulate the activity of the regulatory element; and
 b) detecting a change in the activity of the regulatory element, thereby identifying an agent that modulates the activity of the plant stress-regulated regulatory element.

145. The method of claim 146, wherein the regulatory element can be 30 operatively linked to a heterologous nucleotide sequence.

146. The method of claim 147, wherein the heterologous nucleotide sequence encodes a reporter molecule.

147. The method of any of claims 146 to 148, which is *in vitro* in a plant cell-free system, in a plant cell in culture, or in a plant *in situ*.

148. The method of claim 149, wherein the plant is a transgenic plant, into which the plant stress-regulated regulatory element has been introduced.

149. The method of any of claims 146 to 150, wherein the agent is a stress mimic.

150. A method of modulating a stress-regulated response in a plant cell, the method comprising expressing in the plant cell a recombinant polypeptide that interacts specifically with a plant stress-regulated regulatory element of claim 144 or claim 145, thereby modulating a stress-regulated response in the plant.

151. The method of claim 152, wherein the recombinant polypeptide comprises a zinc finger domain, which specifically interacts with the stress-regulated regulatory element, and a transcription effector domain, which effects expression of the regulatory element.

152. The method of claim 153, wherein the effector domain is a transcription activation domain.

153. The method of claim 153, wherein the effector domain is a transcription repressor domain.

575

154. A method for identifying a polynucleotide involved in a stress response of a plant, the method comprising:

- a) contacting nucleic acid molecules representative of expressed polynucleotides in plant cells of a plant exposed to a stress condition or combination of stress conditions with an array of probes representative of the plant cell genome; and
- b) detecting a nucleic acid molecule that exhibits at least a two-fold change in the level of expression as compared to the level of the nucleic acid molecule in a corresponding plant cell of a plant that was not exposed to the stress condition, thereby identifying a polynucleotide involved in a stress response of the plant.

155. The method of claim 156, comprising identifying a plurality of polynucleotides involved in the stress response in the plant.

156. The method of claim 156 or 157, further comprising isolating the polynucleotide or plurality of polynucleotides.

157. A computer readable medium having stored thereon computer executable instructions for performing a method comprising:

- a) receiving data on expression in a cell of a plant of a nucleic acid molecule having at least 70% sequence identity to a nucleotide sequence comprising any of SEQ ID NO. 1-5379; and
- b) comparing the data on expression of the nucleic acid molecule with data on expression of the nucleic acid in a cell of a plant that has not been exposed to an abiotic stress, of a plant that has been exposed to an abiotic stress condition or combination of abiotic stress conditions, or of a combination of such plants.

576

158. The computer readable medium of claim 159, wherein the nucleic acid molecule comprises one of a plurality of nucleic acid molecules, and wherein the computer executable instructions are capable performing receiving and comparing of any or all of the plurality of nucleic acid molecules.

5

159. A computer-readable medium having stored thereon a data structure comprising:

sequence data for at least one nucleic acid molecule having at least 70% nucleic acid sequence identity to a polynucleotide having a nucleotide sequence as set forth in any of SEQ ID NO. 1-5379 or a nucleotide sequence complementary thereto; and

10

a module receiving the nucleic acid molecule sequence data, which compares the nucleic acid molecule sequence data to a least one other nucleic acid sequence.

15